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ORIGINAL LECTURES.

CAISSON DISEASE.

*A Clinical Lecture delivered at the Pennsylvania Hospital,
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(Reported by Charles Baum, M.D.)

GENTLEMEN: The patient I shall now bring before you is suffering with a disease which, until within a few years, not only was unknown, but did not exist. He has caisson disease, which is a term we use to express the train of symptoms produced by working in compressed air.

Of late years, in building the piers and abutments of bridges, and in digging tunnels deep down below water-level, engineers have made use of a contrivance called a caisson, which is in effect nothing but a diving-bell. An air-tight iron shell is constructed of the size and shape of the pier or abutment to be built. This shell may be about nine feet in height, and is made very strong with stays and braces of wood and iron, and it is, of course, open at the bottom. On the top is laid the masonry, the whole surface being covered, except small spaces, which, as the pile of masonry becomes higher and higher, assume the appearance of wells, and are technically termed shafts. The object of a contrivance of this kind is to render it possible to carry the foundations of a bridge through the soft and unstable material which often forms the bottoms of rivers, down to rock or other suitable bed. This, you can readily understand, is easily accomplished by sinking the caisson with its superincumbent load of masonry to the bottom of the river, preventing the water's filling the chamber by keeping it constantly pumped full of air.

When once the structure rests upon the bed of the river, men in the air-chamber dig away the sand or mud underneath, and it is removed by the suction of sand-pumps and discharged through the shafts at the top. The means of entrance to and exit from the air-chamber is through what are called air-locks, which are air-tight iron chambers, placed either at the top or bottom of the shafts. These chambers have two doors, one communicating with the outer air, and the other with the air-chamber of the caisson, and these are of such size that the workmen and building materials can pass through. There are also pipes provided with stop-cocks, one communicating with the air-chamber, and the other with the outer air, by means of which the air-pressure can be made to equal that which exists within the chamber or that outside. When a man wishes to enter the air-chamber, he goes to the air-lock, and, the door into the outer air being open and that communicating with the chamber closed, he goes into the lock,

and, closing the door behind him (both doors being now shut), he turns the stop-cock and allows the compressed air from the air-chamber of the caisson to rush in until the pressure within the lock is equal to that in the chamber; then it is only necessary to open the door of entrance to the chamber to be able to go in. In coming out the process is simply reversed.

There has been published within a few years a *History of the St. Louis Bridge*, by Prof. C. M. Woodward, which contains many interesting facts connected with the results of exposure to compressed air upon the human economy. Some of the supports of this immense bridge across the Mississippi River, the building of which was one of the greatest feats of modern engineering, are carried down to a greater depth below the water-level than are those of any other bridge in the world. The experience gained in the building of this bridge, the piers of which were sunk so deep, being about one hundred feet below the surface of the water when the river was at its ordinary level, was very extensive and valuable.

When a man goes into the air-lock to gain admission to the air-chamber of the caisson, and the compressed air from the chamber is allowed to rush in, as the air-pressure increases there is often produced violent pain in the ears with bleeding from the nose or even from the lungs. If the pain in the ears is not relieved by blowing the nose, or taking a swallow of water and thus inflating the middle ear through the Eustachian tube to equalize the pressure upon the two sides of the drum membrane, such a man should beat a retreat, and not expose himself to further increasing air-pressure. These are the worst effects produced while going into the compressed air; and while in, and even when working in the chamber exposed to the full effects of the increased air-pressure, no dangerous effects are experienced. It is after coming out from the caisson that the effects are produced.

The symptoms, as described by Dr. A. H. Smith, in Pepper's *System of Medicine* (vol. iii. p. 854), are, "in the order of their frequency, intense neuralgic pain in one or more of the extremities, and sometimes in the trunk; epigastric pain; nausea and vomiting; more or less complete paralysis, which may be local or general; headache; vertigo; and coma." The disease is usually very sudden in its onset, men having often been stricken down with paralysis while mounting the stairs after coming out from the air-chamber, or while walking to their homes. Dr. Smith had charge of the health of the men employed in the caisson-work at the building of the East River Bridge, in New York. The piers of this bridge were not carried down to so great a depth as were those of the St. Louis Bridge, and only three men died from exposure during its construction. Dr. Smith states that heavy men with a tendency to corpulence were much more likely to be unfavorably affected than were lank and spare men. Prof. Woodward (*loc. cit.*, page 257) states that about 600 men were employed in

the air-chambers of the St. Louis Bridge, and of these 119 are known to have been more or less seriously affected with the disease, 14 died, and 2 were crippled. "Two-thirds of those taken sick at the east pier were attacked immediately on coming out, either on the stairs or as soon as the top was reached. In other cases the men were generally attacked within half an hour. . . . As a rule, chance visitors had no personal sufferings to report beyond a 'frightful pain' in their ears while making the first passage of the air-lock."

"It must not be forgotten that *no one was attacked while under pressure*, nor while pressure was being applied; the fatal moment was when the pressure was removed, or within half an hour from leaving the air-chamber" (*loc. cit.*, pp. 257 and 261).

Post-mortem examinations were made of the bodies of quite a number of men who died of this disease, and the most constant lesions found were intense congestion of the brain and spinal cord and of their membranes, and often some arachnoid effusion. There were also found in some instances hemorrhages in the kidneys, and sometimes injected areas, or even patches of ecchymosis in the stomach, intestines, and bladder.

There have been various explanations offered of the mode of action of compressed air in producing all these effects upon the human economy. Prof. L. Bauer (*St. Louis Medical and Surgical Journal*, new series, vol. vii. pp. 234-245) suggests that hyperoxygenation and increased waste of the organic structures take place in the body while it is in the compressed air, and that, at the same time, the blood necessarily carries more carbonic acid and other effete material. So long as the person continues in the compressed air, the hyperoxygenation goes on, and no ill-effects are experienced; but, when the pressure is removed, the hyperoxygenation immediately ceases, and the accumulation of waste materials acts as a poison to the system.

Dr. A. H. Smith thinks the deleterious effects are due to the changed condition of the circulation, the blood being driven, while the subject is in the caisson, from the surface toward the interior of the body where the pressure is less, and that it is forced from all the more compressible tissues into the more solid ones, and particularly into bony cavities. When the pressure is removed, the blood rushes toward the surface, and into all the vessels which have been emptied by the pressure until they are so distended that their walls become paralyzed. The vessels of the brain and spinal cord, which lie in bony cavities, are naturally the most affected, and they are so distended that "the vaso-motor system becomes out of use."

Dr. Jaminet, who had charge of the men who worked in the caissons at St. Louis, attributed the disease to the increased and rapid tissue-waste which, he said, took place while the men were subjected to the pressure. He found that the men breathed twenty-one times a minute, instead of eighteen, as is natural, and that an increased amount of urine was passed while they were in the compressed air, and that it contained an abnormally large amount of urea. They sweated, too, when the temperature was lower than that at which men will usually sweat. Where men work under a pressure of four and a half atmospheres, as was the case at St. Louis, he said that at each breath the man took four and a

half times as much oxygen into the lungs as when subjected to the usual pressure, and consequently, he argued, the body-waste went on four times as fast.

François and Paul Bert are quoted by Dr. A. H. Smith (*loc. cit.*, p. 855) as suggesting that the morbid phenomena may be due to the liberation of air or nitrogen in the vessels, which had been absorbed while under pressure, the bubbles of gas thus liberated obstructing the bloodvessels.

C. M. Woodward (*loc. cit.*, p. 258) expresses the opinion, "that the vital energies of the men taken sick were to a great extent paralyzed by loss of heat." This loss was due:

"1. To the expansion of the air in the lock, while coming out.

"2. To the expansion of the free gases and vapors within the body, when relieved of the abnormal pressure.

"3. To the liberation of the gases held in solution by the liquids of the body.

"4. To the severe physical effort of climbing the stairs."

He lays great stress upon the fact, that all the men felt very cold upon coming out of the compressed air, and says, that, although, while in the chamber, everyone had a feeling of exhilaration, upon coming out "the increased vital energy gave place to a very low ebb of vitality and an all-pervading sense of frigid helplessness."

It would seem likely that the real state of the case is, that the effects produced are due, not to any one of the causes suggested alone, but to all of them acting together, or to varying combinations of two or more of them. The very name which has been given the affection indicates that it is only a term which has been used for convenience to express a varied and complicated train of symptoms, which probably may be due to a great variety of causes. It appears to be certain, that there is, while under increased air pressure and afterwards, great loss of body heat, increased tissue-waste, and driving of the blood from the surface toward the interior, and subsequent rapid expansion of all the liquids and gases in the body, those within the bony cavities having the least favorable opportunity for recovering their stable equilibrium. These causes must act to different degrees and in different ways to produce the variety of effects that have resulted in the men who have at different times been affected.

There is a story told in the St. Louis Bridge history, that upon one occasion a visitor opened a brandy flask while in the chamber, and then, after securely screwing on the lid, thought no more of it until he got back to the outer air, when his flask exploded with considerable violence. It is also said, that if the Eustachian tubes are obstructed, rupture of the drum membrane is certain to take place upon going into the compressed air, and this has occurred. No more telling story could be told than that of the brandy flask, to show what must occur with every liquid and gas contained within the human economy upon coming out from the compressed air-chamber, and when it is remembered that sometimes as little as three to five minutes only were allowed to pass between the time when men were in the air-chamber, subjected to a pressure of four and a half at-

mospheres, and their coming out to the usual pressure, the wonder is, not that so many were sick in consequence, but that any escaped unharmed.

The patient I show you is suffering with the disease in one of its milder forms. He is twenty-eight years of age, and, as you see, is a strong and muscular-looking man. He was employed at the bridge which the Baltimore and Ohio Railroad Company are building below Gray's Ferry. What the depth is at which they are now working I do not know, but this man labored in the caisson only during one shift, and he tells us that they are now engaged in concreting, which shows that the work must be near its completion, for concrete is only used after the caisson reaches the bed upon which it is to rest; first to make a level surface for it to rest upon, and lastly to fill the caisson itself.

This patient went to work at four in the afternoon and labored until twelve at night, having had a rest at the end of the first four hours, when all the men on the shift came out of the chamber to eat lunch. He had never done any work of the kind before, and after coming out from the caisson at first felt no ill-effects. At this bridge the air-locks are placed at the top of the shafts, and the men climb out by means of ladders; the ascent is made, therefore, while still in compressed air and not after coming out, as was the case at the St. Louis Bridge. This man walked to his boarding-house, which was about half a mile away, and as he climbed the stairs to go to bed he felt some pain in the calves of the legs. He was hardly in bed, however, and had not even slept, when he was seized with pains through and above and below the knees, which were so violent that he was forced to jump from bed. The greater part of the rest of the night he passed in rubbing his legs and limping about the room, the pain being so severe that he could not lie still for a moment. Thirty-six hours later he came to the hospital, and was admitted the day before yesterday, so it is now three days and a half since he was attacked, and the attack came on, as I have told you it usually does, within a short time after leaving the compressed air-chamber. This man is only now beginning to have any comfortable degree of freedom from pain. When he was first admitted he was given, as is the custom in the ward with all patients who are not too ill, a warm bath, and he says it gave him great relief. An examination of the urine showed that it contained a very small amount of albumen but no tube-casts could be found.¹

In none of the accounts of this disease that I have been able to obtain, is any mention made of the urine having been examined for albumen, and this is very strange, for *a priori* there seems every reason to expect that it would often be present, for there have been found, at some of the autopsies made, hemorrhages in the kidneys, and all authorities speak of the high degree of congestion of the internal organs that exists.

The prognosis in this disease should be a guarded one, if the patient manifests any of the more severe symptoms. It can probably be said, however, that any one who is not severely affected within twenty-four hours after exposure to the cause of the disease is safe, for in

all the men attacked the symptoms seem to have reached their maximum within that length of time. By this statement is meant the primary symptoms, for it goes without saying that injury of the brain and spinal cord might set up inflammatory conditions which would take much longer to limit themselves; witness the fact that one of the men stricken with paralysis at St. Louis, lingered for nearly a year, to die finally.

The treatment which should receive our closest study and promises most fairly in the results we may hope to attain, is to be sought for in the direction of preventive medicine. No more striking exemplification of the truth of this statement could be desired, than what I can tell you in connection with the building of the St. Louis Bridge. In building the east pier thirteen of the men employed died; in building the east abutment, which was sunk five feet deeper than the east pier, being carried down one hundred and twenty-seven feet below high water mark, only one man died. The causes of this great discrepancy in mortality are not far to seek; in building the east pier, the men after coming from the air-chamber found themselves at the bottom of the shaft, in the open air, chilled to the bone from having come out of the compressed air, and exhausted with having worked under the unnatural pressure, with about one hundred and ninety steps to climb before they arrived at the surface of the earth. When the east abutment was constructed, a steam elevator was used to transport the men from the bottom of the shaft to the top, and at this time, too, the physician in charge had had further opportunity to study the effects of compressed air, and stringent regulations were made to oblige the men to keep themselves in the best possible condition.

All the men who applied for employment at the caisson work were examined, and those found to have any physical disability were rejected. Each man was made to lie down upon a bed for half an hour after coming out of the caisson, before he was allowed to go home. Beef tea was served to them, and no man was allowed to go to work except he had had a good meal within an hour or two before. No ill-nourished or poorly clad men were employed. Dr. Jaminet insisted very strongly upon the very great importance of taking food shortly before going to work in the caisson. The effects of these hygienic regulations and the use of the elevator, which probably did more to save the men than any other one thing, were abundantly demonstrated by the results, for, as already stated, thirteen men died during the construction of the east pier, while but one life was lost during that of the east abutment, which was sunk five feet deeper.

Prof. Woodward suggests the following rules (*loc. cit.*, p. 262) as proper for the management of men working in compressed air.

“ 1. Men must be sound and well fed. They should eat a hearty meal about one hour before entering the air-chamber.

“ 2. The periods of labor should be diminished as the pressure increases; say, to two watches of two hours each per day under a pressure of four atmospheres.

“ 3. Men should have perfect rest and warmth for half an hour after coming out. This includes the use of an elevator.

¹ A few days later the albumen had disappeared from the urine, and the patient was discharged declaring himself well.

"4. The pressure in the air-lock should not be increased more than six pounds per minute, nor diminished more than four pounds per minute. If, when the pressure is increasing, any one has pain in his ears which cannot be removed by blowing his nose, or by swallowing water, the inlet of air should be stopped and the man sent out.

"5. Every man, just before leaving the air-chamber, should be required to swallow about a pint of hot coffee, tea, or soup.

"6. There should be separate air-locks for entrance and for exit. The exit air-lock should be provided with heating apparatus, which should maintain a proper temperature and furnish direct heat to the bodies of the men."

The treatment of the disease itself must be varied as one or other of its phases is presented. The pains can be best relieved by the use of morphia, and Dr. Smith recommends its free use; half a grain to be given at first and a quarter of a grain every hour afterwards until relief is obtained. Epigastric pain can usually be relieved by an alcoholic stimulant with ginger. Dr. Smith highly recommends the use of ergot, and gives a drachm of the fluid extract when there seems to be threatening of paralysis. If there is paralysis, it must be treated upon general principles. A hot bath has been found greatly to relieve the pain, but its use is discountenanced by Dr. Jaminet, as paralysis came on in some of his cases while they were in the bath. It has been said that prompt relief of the symptoms may be obtained by returning the subject to the compressed-air chamber, but this would be difficult to manage in most instances, as there are often many stairs or high ladders to be climbed before it could be accomplished, and there would be no facilities for taking care of sick men; besides that they would be much in the way of the further prosecution of work.

NOTE. For the convenience of the reader, the following bibliography is appended:

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ORIGINAL ARTICLES.

REMARKS ON EXCISION OF THE HIP.¹

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An apology is perhaps due to the Society for again bringing up so well-worn a subject as excision of the hip. But as it is one upon which surgical opinion is far from unanimous, its consideration must be always in order until the value of the operation is better settled than it yet is. The more recent views concerning tubercle and the rise of antiseptic surgery have stimulated the resort to excision in hip disease. Aseptic methods have now been long enough employed for considerable experience to have been accumulated as to their effect upon the ultimate results of this operation. This paper is the outcome of an attempt to ascertain from the periodical literature of the last six or seven years, what this experience has been, and whether any conclusions could be drawn from it regarding the indications for resection in hip disease. Although tolerably familiar with the difficulties of the question, I confess that I was somewhat surprised at the scantiness of the material which came to hand that was valuable for exact comparisons.

The grounds upon which resection of the hip is urged as preferable to non-interference are usually three:

First. That it directly saves life.

Second. That it shortens treatment, and by so doing, lessens risks both vital and functional.

Third. That it gives better functional results.

There can be no manner of doubt that the operation often saves lives that otherwise must certainly have been sacrificed. Such operations *in extremis* have been aptly compared to tracheotomy in like conditions. Under such circumstances failures should not be counted. Every success should be esteemed a clear gain, and even prolongation of life and mitigation of suffering be reckoned in favor of the operation. About such resections there is probably no question. The inquiry is rather this: comparing cases as nearly as possible similar, at what period, or under what circumstances, do the results obtained by excision become preferable to those gained by less radical measures? And it may be here said, that a good deal that has been said regarding the relative value of early or late operations is rather beside the question; for there is little doubt as to their comparative success. The issue is between the operation at all and conservative methods, and the former is clearly indicated whenever it can be shown to give better prospects for life than the latter.

The value to be set upon resection, therefore, depends very largely upon what is held to be the natural tendency of the disease, and upon what success can be gained by conservative treatment. And right here, at the start, we find a divergence of views so wide as to go far toward explaining the unsettled condition of opinion regarding the operation. The most gloomy statements come from German authors.

¹ Read before the New York Surgical Society, November 10, 1885.

Thus, Billroth gave the death-rate of his cases, some of which were followed after leaving the hospital, at $31\frac{1}{4}$ per cent., taking, if I understand correctly, all cases. Hueter,¹ from hospital records alone, gave $26\frac{3}{4}$ per cent. The two lists united give $28\frac{2}{3}$ per cent. Nowhere else is the death-rate set so high when all stages of the disease are considered together. From reports for several years of the Orthopaedic Hospital in this city, I find that the deaths and discharges on account of incurability together make an annual average of about $4\frac{3}{4}$ per cent. of all cases treated. Gibney's statistics² from the Hospital for the Ruptured and Crippled, give for 288 cases a mortality from all causes of $12\frac{1}{2}$ per cent. Taylor's statistics,³ which give (deducting one case of violent death) 2 deaths in 92 cases, or $2\frac{1}{6}$ per cent., cannot be fairly quoted here, as they are drawn from a private practice among well-to-do people.

Although excision has of late been done quite early in the disease, yet it would be obviously unfair to make any comparison between the death-rate of these collections of cases in all stages, and the most favorable operative statistics. Again, although excision is frequently done when destructive changes are recognizable in the joint, but before suppuration is evident, I know of no extended statistics of the corresponding cases treated conservatively. A few cases will be mentioned further on. But regarding suppurative coxitis, we have more distinct expressions of the results of experience and some statistics. Here again, Hueter's estimates exceed others in gravity. While acknowledging the absence of exact information, he states that he should be surprised if statistics would show that more than 50 per cent. of cases that reach the "second florescence stage" (the stage of flexion, adduction, and inward rotation) ever were healed. And he further states his belief that "suppuration of the hip-joint, if the cases in which a single small abscess forms and quickly closes again, and also the cases of scanty suppuration in the granulations of synovitis hyperplastica granulosa are subtracted, is a nearly absolutely fatal process."⁴ Volkmann⁵ is by no means as hopeless. Ollier⁶ thinks that "the greater part of the suppurative coxalgias of children, may be cured by methodical expectation, aided by the resources of hygiene." Taylor lost 2 out of 24 suppurative cases, or $8\frac{2}{3}$ per cent. This, as before stated, was in private practice. The Committee of the Clinical Society of London set the mortality cases of suppurative hip disease treated expectantly at $33\frac{1}{2}$ per cent. from all causes, or leaving out causes unconnected with the disease, at $31\frac{1}{2}$ per cent. Cazin⁷ gives the result of 80 cases treated at the hospital at Berck, sent from a Parisian hospital after they had failed to improve there. All

but 10 of these were grave cases, and 5 per cent. were already albuminuric when received. The statistics cover five years; 55 per cent. were cured, $12\frac{1}{2}$ per cent. died, $7\frac{1}{2}$ per cent. were benefited, and the remaining 25 per cent. were not cured when removed. This remarkable success for cases of such severity, may perhaps be not fairly introduced here, as the patients, although belonging to the hospital class, were at Berck under excellent hygienic influences, and were systematically treated.

Gibney⁸ out of 80 cases of hip disease, cured without mechanical treatment, found 48 that had had abscesses. No percentage of mortality can be made here, as the total number having had abscesses is not known; but this number of recoveries under a plan of the purest expectancy, shows that suppurative coxitis cannot be nearly as grave an accident as some have estimated it to be. As an offset, however, may be mentioned 19 cases recorded by Caumont,⁹ treated conservatively, of which 12, or $63\frac{1}{2}$ per cent., died.

From these discordant figures and opinions it seems to me fair to conclude that their disparity is not the result of the bias of different observers, but that in some communities or districts circumstances may so influence the course of disease, as to make an actual difference in the facts, as well as in the interpretation of them. To express an opinion, therefore, as to the average mortality of suppurative coxitis may be hazardous, or even presumptuous. Nevertheless, my own observations lead me to accept the more moderate estimates as the more nearly correct, and I consider that the rate set in the Clinical Society's report is amply large; that is to say, that the death-rate does not exceed 30 per cent. even among the poor, at least as we know poverty in this great city. In private conversations, Drs. Gibney and Shaffer, of this city, both of whom have had unusual facilities for knowing the results of hip disease among the poor, expressed the opinion that the estimate I have given is very liberal and would considerably exceed the facts.

Now as to the death-rate of excision. Leisrinks¹⁰ often quoted tables set it at $63\frac{1}{2}$ per cent., but this high figure is reached by setting aside all unhealed cases as worthless; which is a source of error, as many such cases go through the same course as unoperated cases and reach an ultimate cure, perhaps by ankylosis, after a long time. If all of Leisrinks' cases had been included, his death-rate would have been 57.9. Sayre's¹¹ table gives 72 cases (2 being still under treatment) with 25 deaths, or 34.7 per cent. Culbertson's tables contain 418 cases, with 174 deaths, or 41.62 per cent. If uncertain cases, 30 in number, are excluded, the percentage will be 45.61. All these collections contain cases kept under observation for quite a long time, and this death-rate is by no means that of operation. Culbertson gives only 29 as immediately resulting from the operation, that is 6.93 per cent. of all cases. This is interesting as showing that even before the advent of anti-

¹ Klinik der Gelenkkrankheiten, S. 142.

² The Strumous Element in the Etiology of Joint Diseases, New York Medical Journal, July and August, 1877, reprint, p. 43.

³ Observations on the Mechanical Treatment of Diseases of the Hip-joint, Boston Medical and Surgical Journal, March 6, 1879, p. 318.

⁴ Loc. cit., p. 641.

⁵ Resectionen der Gelenke. Samml. Ke Vort., No. 51, p. 2.

⁶ Revue de Chirurgie, 1881.

⁷ Transactions, 1881.

⁸ Bulletin et Mémoires de la Société de Chirurgie, Paris, 1867.

¹ Medical Record, vol. xiii. p. 174.

² Deutsche Zeitschr. f. Chirurgie, Bd. xx. S. 137.

³ Langenbeck's Archiv f. kl. Chirurgie, Bd. xii. S. 177.

⁴ Orthopaedic Surgery, second edition, p. 347.

septic surgery, the operation, as such, added but little to the general mortality from hip disease.

Many lists published since the beginning of anti-septic surgery, contain cases treated in both periods, and often no attempt is made to separate them. Thus, Cowell,¹ in reporting 65 operations of his own, says "I now perform the operation antiseptically," but the results are all grouped together. It does not appear that these cases were followed beyond the hospital. There were 7 deaths among them, or 10.77 per cent. Three cases above 18 years of age all died. Of the 62 cases below 18 years only 4 died, or 6.15 per cent. Here should be placed the statistics of the Clinical Society's report, before quoted, which gave a mortality of 40 per cent., or excluding deaths from causes unconnected with the disease 37.7 per cent. Holmes's² list, given in his well-known address in surgery, of operations done in British hospitals, belong to the five years ending 1878, a period during which antiseptic precautions were coming into use. They should probably be considered as mixed operations. It does not appear how long the cases were followed, but of 215 cases, 40, or 18.6 per cent., died, and 57, or 26.5 per cent., failed. Caumont,³ whose statistics are commendable for the care with which cases have been traced for years after they left the hospital, and carefully classified, records 42 cases with 26 deaths, or 61.9 per cent. Only 5, or 11.9 per cent., died from the operation, the remaining 50 per cent. were from progressive caries, amyloid changes, and tuberculosis. His death-rate before antisepsis was 66 per cent.; since antisepsis, 41 per cent.

Of operations entirely antiseptic, Volkmann⁴ reports 48, with but 4 deaths, or 8½ per cent. Two only of these (from shock) were strictly deaths from operation; the third, after two months, was from thrombosis, and the fourth, after three and a quarter months, from hemorrhage, from ulceration of an artery, due to a suppurating scrofulous gland. Volkmann estimates that 8 to 10 would subsequently prove fatal from the progress of the disease, which would run up the death-rate to 25 to 30 per cent. Korff⁵ reports 16 deaths out of 33 cases treated antiseptically (48.48 per cent.), the death-rate diminishing steadily as the methods were improved, being 75 per cent. when Lister only was used, 52.63 per cent. with a modified Lister, 30 per cent. with a bichloride and salt gauze dressing. Grosch⁶ bases his statistics on 166 cases treated antiseptically; 120 of these were observed to the end, with 44 deaths, or 46.7 per cent. He divides his cases into three stages. The first contains those operated on with unruptured capsule and slight changes in the joint; the second, cases with abscess and fistulae; the third, cases with long suppuration, and extensive destruction of joint, with great debilitation. In the first class there was for children no death-rate; for the second, it was 24.1

per cent.; for the third, 67.5 per cent. Further, he found that for the period 1876-82, after antiseptic methods were well established, the death-rate was 9 per cent. less than for the period 1870-75, in which these methods were forming. Quite recently Alexander⁷ gives the results of 36 operations apparently all done and dressed antiseptically (chloride of zinc and Lister). One case only died of operation (shock), 2.77 per cent., 10 more from disease. Total death-rate, 30.55 per cent.

It will at once be seen that statistics gathered in such different ways and to bring out different aspects of the question, cannot be closely compared with hope of an exact result. But if I have correctly apprehended the general import, it is this, that the mortality after resection of the hip-joint has materially diminished since the introduction of antiseptic precautions, and that the diminution corresponds very closely to the death-rate formerly chargeable immediately to the operation itself. Take the extensive tables of Culbertson; setting aside uncertain cases, he had a total death-rate of 44.58 per cent.; deducting deaths from operation (6.93 per cent.), we have 37.65 per cent., which is very nearly the same as Grosch's 36.7 per cent. for 120 completed cases under antiseptic treatment. In other words, asepsis has nearly abolished the risks from wound complications, and the death-rate is reduced very nearly to that from the uninterrupted disease when the operation has failed to arrest it.⁸ And as it has been shown that in cases that heal, the period of healing is shorter than when antiseptics are not used, the danger of amyloid changes may be slightly lessened. Thus much has been gained by perfect antisepsis: in weighing the chances in any given case, we need no longer put much stress on the dangers of the operation itself, except perhaps the one element of shock, which the prolonged extirpation of diseased and suspected tissues necessitated by the thoroughness of modern surgery, sometimes favors. It seems then fair to say, that whenever the disease in its natural course assumes an aspect threatening to life resection is indicated, provided none of the less radical operations (drainage, gouging, etc.) can remove the danger.

It has just been mentioned that very early operations done while the changes in the joint are slight and the capsule unruptured have given no death-rate or almost none. But, on the other hand, the disease itself has practically no death rate at this stage. Occasionally, general or visceral tuberculosis may occur thus early, but rarely. Amyloid changes and exhaustion do not enter here as causes of death. It does not appear then that there is thus early any vital indication for excision. The early operation has been urged as vitally indicated in fore-stalling tuberculosis, and the other attendant risks of morbus coxarius by cutting short the disease. If it could be proven that such prevention actually followed the operation, it would be a weighty argument. As Grosch points out, tuberculosis is still the com-

¹ British Med. Journal, 1882, II. 360.

² Ibid., 1880, II. 212.

³ Deutsche Zeitung f. Chirurgie, 1884, Bd. xx. Hefte 3 and 4.

⁴ Verhandl. d. Deutsch. Gesellsch. f. Chirurgie, 1877, S. 59.

⁵ Deutsche Zeitschr. f. Chirurgie, Bd. xxii. S. 149.

⁶ Inaugural Dissertation, Dorpat, 1882, abstract in Centralbl. f. Chirurgie, 1882, S. 228.

⁷ Liverpool Med. Chir. Journal, 1885, p. 289.

⁸ At first sight, it would seem as if more had been accomplished, but, as Grosch's statistics contain very early cases of a kind that scarcely appear in Culbertson's, the comparison is not quite upon an equal basis.

monest cause of death. König¹ maintains, as the result of a large experience in excision of all kinds (117 in three and a half years), that the hoped for immunity from tubercular infection has not been gained by antisepic resection; of 25 deaths out of his operations, 18 were from tuberculosis, and, in addition, 9 cases, not yet dead, were hopelessly tuberculous; in all, 21.5 per cent. of his cases; and of 21 hip excisions, 10 (47.6 per cent.) died of tuberculosis in four years. In the debate on König's paper, some disagreement with his views was expressed, but Esmarch essentially confirmed them. Caumont² distinctly states that he found no preventive effect in his cases. Of 26 cases of scrofulous origin, treated by expectancy, he lost 5, rather less than one-fifth, from tubercular diseases; of 12 resected, he lost 4, or one-third. Others may have better results, but the prophylactic effect cannot be very decided if such marked exceptions occur.

Nor is it clear that destructive changes in the joint without evident suppuration often present a vital indication for excision. A vicious form of caries, characterized by great suffering and great destructiveness of tissues, without much pus-formation (*caries sicca*), is probably best met by resection. But of ordinary caries this is not true. It is a matter of common experience to find cases in which the destructive process is evidenced by the misplacement of the trochanter, which go through the whole course to recovery without any external evidence of suppuration. Caumont has taken the trouble to place such cases by themselves in his report. Of those treated expectantly, 25 per cent. died; of those resected, 50 per cent.

It is not until suppuration has taken place that any vital indication for resection appears. Even here, I believe, the dictum of Hueter³ is far too sweeping when he says: "I hold resection of the hip-joint in coxitis to be indicated as soon as an extensive suppuration of the joint manifests itself, or as soon as the course shows that the termination in suppuration can be no longer prevented." Such a statement, however, is the natural outcome of his extremely gloomy views of the results of suppuration. If the opinion I have expressed as to the prognosis of suppurative coxalgia is anywhere near a correct one, resection is only indicated in a minority of cases. The indication comes not from the existence, but from the persistence, of suppuration. If it persists, after the drainage of the abscesses, and under the best hygienic resources the patient can command, particularly if fever attends the suppuration, then exploration of the joint is indicated by incision or dilatation of existing fistulae, with resection or a less extensive extirpation of the diseased parts, as the condition found may demand. And this should not be delayed after the system shows distinct depression from the suppurative process. To wait until the operation is the only escape from impending death, is to err on the side of ultra-conservatism. I have not men-

tioned necrosis or sequestra in the joint, because under such circumstances some operation for the removal of the dead bone is imperative. Likewise, if perforation of the acetabulum with pelvic abscess exist, we have no resource but resection. True dislocation of the femur with suppuration of the hip-joint is of very rare occurrence in ordinary hip disease, and the indication for excision, often urged in this connection, is rather orthopaedic than vital.

A few words may be said regarding the second claim, that, namely, resection shortens the period of treatment, and that it diminishes the risks, both vital and functional. This is true of those cases that heal promptly and soundly, but only of such. Besides those that are fatal, there is a long series of cases that neither die nor heal, but live for years with persistent fistulae. In Leisrink's tables 12.5 per cent. were "unhealed;" in Holmes's, 26.5 per cent. were "failures." Such cases are now spoken of as "relapses." Asepsis favors prompt healing of the soft parts, and the union subsequently in many cases breaks down, and the old process is re-established under circumstances in no way improved. Just how frequent these "relapses" are, I cannot say, but they are often mentioned as "common." My own observations make them about 20 per cent. of all cases operated on. A friend, who was in Kiel in the past summer, quotes Neuber as saying that "about half" of his cases relapsed. This refers, I understand, to the reopening of the wound, with tubercular granulations of its edges. Many of these ultimately do well after excision of the diseased parts.

Lastly, as to function. It is far from proven that resection gives better average results than a "natural" cure. In the question, shortening is not the most important element; the shortening from resection is, on the average, greater than from natural cure, but not so very much. In a case not resected, but of such severity as to bring the operation into consideration, the growth of bone from the upper extremity will have been considerably retarded or arrested according to the degree in which the epiphyseal cartilage has been affected. In a case resected, the growth will be entirely abolished and some bone already produced must be sacrificed. Ollier¹ points out that although the total growth in length from the lower extremity of the femur amounts to about twice that from the upper, yet, during the first four years of life, the two ends contribute about equally, and that later the lower increases in activity until its work is, toward the end, about three times that of the upper. The prognosis as to length, then, will vary with the age at which excision is done; very early excisions giving much the greatest ultimate shortening. The leaving of the trochanter does not much affect this relation, for what it contributes to growth in length is mainly above the joint, and does not much increase the efficient length of the bone.

The atrophy from inactivity affects the whole limb, and is not materially different in cases resected from those left alone. If a resection were promptly successful, the advantage ought to be in favor of the operation as permitting more speedy use of the limb.

¹ *Ueber die Resultate der Gelenkresektionen, etc.* • Verhandl. der Deutsch Gesellsch. f. Chirurgie IX. Kongress. Also, die Frühresection bei Tuberkulöser Erkrankung der Gelenke, etc. Archiv f. klin. Chirurgie, Bd. xxvi, S. 822.

² Loc. cit.

³ Loc. cit., p. 653.

Again, a useful joint in a lower extremity must be stable as well as mobile. And, for most occupations, security in the support of the trunk is more essential than motion at any one joint. Mobility, with security at the hip after excision, is only obtainable when very strong fibrous attachments exist between the pelvis and the remains of the femur. The destruction from the disease, and the necessary extirpation of affected tissues, usually prevent the formation of attachments at once strong and flexible. Exceptions occasionally occur, and some very brilliant results have been obtained in which stability existed with very free motion.¹ Some very remarkable attempts at renovation of a hip-joint have occurred, and interesting specimens have been described.² Nevertheless, as a rule, the motion, if considerable, is combined with such feebleness of support that the femur rides up and down on the pelvis in the act of walking. "Flail-joint," in the usual acceptation of the term as meaning uncontrollable motion in various directions, is rare, and I do not remember to have seen it. It is this insecurity that has led some operators (Ollier, Caumont) to urge that if the operation is made very late, or in cases where much local damage has been done, if the patient must earn his living it is better to strive for ankylosis rather than mobility. *A fortiori*, the ankylosis of a natural cure—the limb, on the average, being longer than after excision—will give for such persons a more useful limb. The compensating mobility of the spinal articulations if the disease occurs in childhood is often marvellous. The most striking instance I ever saw is No. 31 in Dr. Sayre's tables of excision; the motion took place in the lumbar spine, not only antero-posteriorly, but laterally through a wide arc. Statistics (Grosch) show no better functional results for antiseptic operations than were formerly obtained.

Functional reasons strengthen the indication for the substitution, whenever possible, of the simple extirpation of diseased parts for formal excision, in that they disturb less the relations of parts. These less radical performances are, by the perfection of aseptic precautions, rendered safe, and the large removals of bone formerly necessary to prevent accumulations of pus and septic matter seem no longer essential. In the same direction, improvement of functional results may be hoped for by the employment in proper cases of the operative manoeuvres in which a partial or temporary removal of the trochanter only is resorted to, the muscular attachments being little disturbed.³

Further, it should not be forgotten that good functional results as to position and motion can only be obtained by prolonged after-treatment. Neglect in this particular constantly produces great deformity; and the care required to secure these good results quite answers the claim already alluded to, that resection is a short road to cure.

The conclusion, then, to which the foregoing brings

us is that extsection of the hip is indicated as a life-saving operation only, and that as it has not been shown that it can save from any dangers except those consequent upon prolonged suppuration, it is, with rare exceptions, only indicated when the suppurative process has evidently reached a dangerous point, and cannot be interrupted by any less serious operation.

THE LOCAL TREATMENT OF LARYNGEAL TUBERCULOSIS.¹

BY BERNARD TAUBER, M.D.

WHETHER phthisis of the larynx precedes the pulmonary deposit or is only a sequence of the latter, is a question which I shall not discuss in this paper. A great many text-books on the practice of medicine still set forth the antiquated notion that topical treatment in this affection is not crowned with the success which we should anticipate, and the *nolle me tangere* plan is generally adopted. I think this is a fallacious doctrine against which I raise my earnest protest, and I can enumerate five cases of laryngeal phthisis of the first stage which are alive to day, after a lapse of ten years, and three cases of the second stage who lived three, four, and five years.

Having observed such favorable results, I take the ground that, if *laryngeal phthisis be observed in the initial or first stage and be properly treated, it can be arrested and sometimes cured*. In the advanced stages, by applying proper treatment to the parts, the patient can be made comfortable and kept up for some time.

Most authors on diseases of the throat recognize two stages of laryngeal phthisis. Clinically, three stages present themselves for treatment; pathologically, four stages are seen, namely: 1st, the stage of anaemia; 2d, that of tumefaction; 3d, that of ulceration; 4th, that in which necrosis or caries of the cartilages is present.

Examining the larynx in the first stage we find a marked anaemia—a paleness of the mucous membrane of a grayish hue, also a loss of adductive power in the vocal cords. Sometimes the latter may be congested. On physical examination, although we may find the lungs insufficiently expanded with diminished resonance, and although we may hear a prolonged expiratory breathing, the lungs may yet be comparatively free from disease. Patients in this condition will seldom seek for medical advice; only when local irritation in the throat has set in, is a laryngeal examination resorted to.

Having recognized the first stage, fortunately for such patients, little local treatment is required; stimulant inhalations of oleum eucalyptus, oleum pini or tinct. benzoini may suffice to allay the local disturbance in the larynx. Change of air and of scene is of paramount importance. There is no doubt that the various climates contain something for the arrest of phthisis in this stage; these are absence of damp soil, asepticity of the air, and dryness of the atmosphere. Outdoor life is the best tonic in phthisis; therefore a trip to New Mexico, Monterey, Mexico, or to Nassau (Bermuda Islands), with the

¹ See, for example, several figured in Sayre's Orthopaedic Surgery.

² Sayre, loc. cit., frontispiece, second edition. Küster, Archiv f. Kl. Chirurgie, Bd. xxix. 409. Israel, Ibid., p. 411.

³ Ollier, loc. cit. König, Centralbl. f. Chirurgie, 1882, S. 457. Neuber, Ibid., 1884, Beilage, S. 75.

¹ Read before the Cincinnati Academy of Medicine, November 16, 1885.

intention of remaining there for several years, is requisite; it is, I may say, indispensable for restoration to health. Those who cannot undertake such an expensive treatment, should use at home compressed air inhalations, and, if tonics be indicated, granules of arsenious acid, hyphosphites and koumiss, etc., should be given them. In a large majority of cases it is in our power to arrest this first stage before the development of the graver symptoms.

If the case have progressed to the second stage, we note a thickening and tumefaction of the mucous membrane, generally covering the arytenoid cartilages on one or both sides, or invading the interarytenoid commissure. I have had good success in checking this tumefaction for three or four years by applying the galvanocautery knife, flat surface, to the swollen parts. The pain occasioned by the cautery was allayed by insufflation of morphia and gum acacia. To reduce the pain to a minimum, I now brush the parts several times before and after the use of the thermocautery with a ten per cent. solution of cocaine. We must not overlook, however, one cardinal point in this stage of the disease, namely, to keep the stomach in good condition, and to treat the subjective symptoms as they appear. For the cough and excessive discharge from the throat, I generally order the patient to inhale a few drops of chloroform and creasote, and insufflate the larynx with morphia and iodoform, or cocaine and powdered sugar.

In the third stage we have to combat an excessive cell growth—destructive ulceration goes on. All our efforts to arrest this progressive stage of the disease are futile. The principal complaint of the patients is the painful deglutition of liquids and solids; they resist the act of swallowing, and it is done only with the greatest reluctance. To allay this misery, insufflation of morphia alone or combined with iodoform is not efficient; the effects of this anodyne may last only a short time, say one hour. The recently discovered cocaine, so highly spoken of as a local anaesthetic, I have tried extensively and faithfully in this stage of the disease in solutions of 4, 8, 10, and 20 per cent., also in the form of powders insufflated to these ulcerated parts. I must confess that this great remedy has disappointed me. Its effects pass away very rapidly—in 25 to 30 minutes—and to keep up its effect it would be necessary for the patient to remain all day in the physician's office, in order to have it reapplied.

For several years I have studied and tried to correct this painful deglutition, and can recommend to the profession a simple and efficient remedy; the application of the following solution, applying it thoroughly to the ulcerated parts once or twice a day:

R.—Acidi carbolic <i>i</i>	.	.	.	3jss.
Tinct. iodini	.	.	.	3ss.
Glycerinæ	.	.	.	3ij.—M.

This application produces a whitish eschar and gives to the thickened and ulcerated parts an artificial covering, a protection, and a prolonged anaesthesia is established. The patient experiences a burning sensation for a very short time; in a few seconds he is enabled to swallow liquids and solids.

I have seen patients ten or fifteen minutes after this application drink a cup of tea or coffee, or a glass of beer, make short work of a tenderloin steak and mashed potatoes, and even eat a hearty meal.

The anaesthetic effect will last from eight to ten hours; therefore, if the patient gets one topical application in the morning, he will be enabled to eat two meals a day; and another application can be made in the afternoon or in the evening, to enable him to take his tea. Imagine the patient's comfort and gratitude!

It is not necessary for me to explain to you the anaesthetic action of carbolic acid. We all know that it lowers the sensibility to pain and touch of the parts to which it is applied. It will even permit free incisions without suffering. Further, the carbolic acid is a destroyer of the bacilli, and at the same time we have the cleansing and antiseptic effects of the iodine.

The question of tracheotomy arises as a remedial measure to overcome the great dyspnoea. This operation is indicated only in the second stage of phthisis laryngealis, in order to secure to the larynx rest from the movements of the muscles, cartilages, and vocal bands engaged in respiration and phonation. In the third and fourth stages I am decidedly opposed to tracheotomy. This operation was justifiable in pre-laryngoscopic times. We know that ulceration is present to a great extent; the cartilages of the larynx and trachea are prone to caries; the presence of a tracheotomy tube in such a locality only causes irritation of the trachea, and does not materially aid respiration and deglutition. All we could achieve by the operation is the prolongation of a miserable existence for a few days. Such a procedure should be resorted to only under the most exceptional circumstances.

In looking over the literature of this subject, I have nowhere found the mixture here recommended to you, and which I have used with the greatest success for the last ten years, described or mentioned as a topical application to the larynx for the production of continued local anaesthesia. I hope my *confrères* will give it a fair trial and report their results.

HOSPITAL NOTES.

DISPENSARY FOR NERVOUS DISEASES, BALTIMORE.

Service of JOHN VAN BIBBER, M.D.

CLINICAL NOTES.

Facial Paralysis (Right).

R. S., sixty years of age, presented himself for treatment, Oct. 16, 1885. Gave the following history: retired on night of Sept. 27, 1885, in good health. On arising next morning, found that he could not comfortably masticate his food, that his mouth was drawn over to left side of face, and that he could not close eye of right side; he experienced some pain on this side. On questioning, he denied having been exposed to draughts while asleep, or at any other time; he said, however, that his face had been swollen and painful for a week previous

to paralysis. On examination, found that all the muscles of the right side of face, supplied by the seventh nerve were paralyzed, for he could not voluntarily wrinkle his brow, close the eye, or move nose or mouth on this side. All the symptoms usually accompanying facial paralysis of a severe form were present. One symptom of particular interest was the hyperesthesia of the right ear, indicating that the neuritis had extended high enough to affect some fibres of the auditory nerve.

The muscles were somewhat atrophied, and the temperature was below normal. There was no reaction whatever to faradic current, and only slight response to galvanic current. He was ordered to come daily for electric treatment, to rub the paralyzed muscles frequently, and to relax the overstretched fibres by pushing the side of face into its proper position.

After one week's treatment, it was found that some of his muscles would slightly reply to the faradic, after first using galvanic current. Patient was now ordered Van Bibber's hook and rubber muscle, and wore strips of adhesive plaster so adjusted as to support the lower fibres of the orbicularis. The above treatment has been persisted in up to date, November 9th, and patient's recovery is now assured, nearly all the muscles of the paralyzed side replying to faradic current. This is the result of above treatment for three weeks, begun three weeks after occurrence of paralysis.

Remarks.—In a case of facial paralysis in a patient 60 years of age, the prognosis is not as good as in younger subjects. The faradic contractility being lost, and interrupted galvanic not producing exaggerated reaction, prove that the origin of the paralysis is not central. I have reason to believe that if the patient had been unable to have the advantage of elastic apparatus and the bands of plaster to overcome the constant stretching of the paralyzed muscles, that his recovery would have been much delayed and a perfect cure extremely doubtful.

If massage is any advantage to a badly nourished muscle, certainly the physical aid in bringing about a more rational and relaxed condition of the over-stretched muscular fibres is a good element in the successful treatment of any paralysis where the opposite muscles are producing injurious traction. It does constantly what massage only does for a limited time, and in this case without the aid of some similar apparatus the good effect of the manipulation of muscles is soon lost in the injurious traction of the left facial group.

MEDICAL PROGRESS.

USE OF THE RECTAL LEVER.—MR. RICHARD DAVY has demonstrated the practical value of rectal compression of the aorta and both common iliac arteries in three instances within the last ten days. The first case was one of compression of the right common iliac artery for the removal of a recurrent growth involving the whole of Scarpa's triangle and the inguinal canal. The external iliac artery and vein were ligatured; so also were the superficial and deep femoral arteries and veins. The patient was a man aged twenty-eight, under Mr. R. Davy's care. Mr. Thomas Bond held the lever. In the second case, Mr. George Cowell amputated at the left hip-joint in a boy aged twelve, for sarcoma of

the femur. Mr. Davy controlled the left common iliac artery. The third case was one of excision of the cervix uteri and adjacent parts for epithelioma, by Dr. Potter, in a woman, aged twenty-nine. Mr. Davy controlled the aorta for five or six minutes during Dr. Potter's manipulations. The total loss of blood during the three operations did not exceed seven ounces, and no rectal inconvenience has been experienced in either case.—*British Medical Journal*, Nov. 7, 1885.

NITROUS OXIDE AND OXYGEN AS AN ANÆSTHETIC IN LABOR.—The great advantages of nitrous oxide as an anæsthetic have induced various observers to endeavor to find a method of administering the gas continuously, so as to keep up the anæsthesia for a sufficient length of time for the performance of surgical operations. Paul Bert, some years ago, made experiments with animals in a chamber of compressed air, a mixture of nitrous oxide and oxygen being inhaled. He found that anæsthesia could be safely kept up for a long period; and he urged the construction of such chambers for operating on the human subject. Nothing of the kind, however, has, as far as we know, been attempted. In 1881, Dr. Si Klikovich, of Professor Botkin's clinic in St. Petersburg, made some experiments on himself, with a mixture of nitrous oxide and oxygen, in the proportion of 80 to 20, without any increase of atmospheric pressure, with a satisfactory result. He also used it for alleviating the pains of labor, and found it very successful and perfectly safe; the great objections to it being its expense, and the cumbersome nature of the required apparatus. Some months ago Professor Zweifel, of Erlangen, erected the necessary apparatus for the supply of the mixed gases to the accouchement ward of his obstetric clinic. He finds it best to administer the gases continuously during the latter part of labor, when the pains are most severe, not, as was practised by Klikovich, merely giving the gases when signs of an approaching pain appeared. Though this treatment had been adopted in sixty patients, no retardation of the process was ever observed. The patients were generally semiconscious; so that though they would answer if asked a question, they felt no pain, and were unaware when the child was born. In one case, where the woman screamed as a stitch was put in the perineum, she afterwards declared she had felt nothing. If this plan of administering nitrous oxide gas be really as satisfactory as Drs. Klikovich and Doederlein, in St. Petersburg and in Erlangen, have found it, surely there might be an apparatus constructed in some of our own lying-in hospitals. Probably, too, the mixed gases could be compressed in an iron bottle, and so made portable. If ever this plan should come into general use, the practitioner of the future, on being sent for in a midwifery case, will find himself obliged to carry, or get carried for him, very much more weighty impedimenta than the present pocket midwifery-case, or even than the most complete "obstetric bag." He will, however, have the satisfaction of knowing that he can really alleviate his patient's sufferings, instead of, as at present, having simply to look on, with folded hands, at agony which, being physiological, he can do nothing to relieve, at least, without running other risks, which, as a rule, he does not feel called upon to do.—*British Medical Journal*, Nov. 7, 1885.

NEPHROTOMY FOR TOTAL SUPPRESSION OF URINE.—MR. CLEMENT LUCAS performed an unique operation in Guy's Hospital on October 29th. A woman, from whom he had removed the right kidney for total destruction of its secreting structure by large calculi and hydronephrosis, about four months ago, and who had made a rapid and complete recovery, was suddenly seized with great pain in the left kidney, followed by vomiting, headache, and suppression of urine. She passed urine last on Sunday morning, October 25th, between eight and nine o'clock; and, from that time till the operation on Thursday afternoon, no urine passed, and vomiting was persistent. Her medical attendant. Mr. Atkins, of Sutton, correctly interpreting the meaning of her symptoms, placed himself in communication with Mr. Lucas, and the patient was brought to London on Wednesday, October 28th. It was thought that the effect of diuretics in flushing the kidney might yet be tried whilst the patient was watched. These proved of no avail, and on Thursday afternoon, the patient having become drowsy and much weaker, Mr. Lucas cut down the remaining kidney, and removed from the pelvis a conical calculus, measuring seven-eighths of an inch by one-half in its greatest diameters. Total suppression had then lasted 102 hours. A free flow of urine took place at once through the wound, and the patient was relieved of her vomiting and drowsiness. Five days after the operation she was doing well and feeling comfortable. Mr. Lucas's case of nephrectomy performed on October 20th healed without suppuration or fever. The patient sat up for the first time on the eighth day, and is now convalescent.—*British Medical Journal*, November 7, 1885.

TREATMENT OF LUPUS.—A new method of treating lupus has recently been suggested by PROFESSOR C. GERHARDT, of Berlin, which may be said to be a direct outcome of the discovery of the bacillus of tubercle. Hitherto it has always been thought essential to use destructive measures in dealing with the disease, and whether by cauterization or by direct scraping out of the affected tissue the main object has always been the same. But of late years the presence of the tubercle bacillus in the lipoid patches has been constantly recognized, although in very small number. As many as twenty and thirty specimens have been examined by Professor Koch before the bacilli have been seen. Taking this fact into consideration with the extremely slow progress of some cases of lupus, Professor Gerhardt is led to the belief that while the bacillus is at work as a principal factor in the disease, some other element must be present which prevents the bacillus from spreading and multiplying with the rapidity which characterizes it elsewhere. He finds in the superficial situation of lupus and its consequent exposure to cold, the deterrent influence which hinders the spread of the microorganism. Acting upon this view, he has adopted a form of treatment whereby the influence of cold, by means of small ice-bags, can be constantly exercised upon the diseased surface, and he records some cases (*Deutsche medicinische Wochenschrift*, No. 41) which would seem by their results to justify the line of treatment, if not to prove the theory upon which it is founded. The advantages claimed for the method are these: that the disease is checked in the same or even a shorter

time than by the ordinary means, and without any destruction of surrounding tissues, and that the activity of the tubercle bacilli is checked, if not altogether destroyed. To what extent the good results hitherto obtained will be permanent has, however, yet to be proved by the test of time.—*Medical Times*, November 7, 1885.

THE EMPLOYMENT OF POWDERED COFFEE AS AN ANTISEPTIC DRESSING IN MILITARY SURGERY.—DR. OPPLER (*Deutsch. milit. Zeitschr.*, 1885) proposes the employment of powdered coffee as a primary dressing upon the battlefield, especially in default of other antiseptics. The powdered coffee should be applied to the wound and covered over with a small quantity of soil, an air-tight antiseptic dressing thereby resulting. Former experiments of Dr. Oppler show that powdered coffee prevents putrefaction of blood, urine, foods, etc., and that it is a true antiseptic.—*Archives de Médecine et de Pharmacie Militaires*, November 1, 1885.

BELLADONNA AS AN AGENT TO PRODUCE TOLERATION OF THE IODIDE OF POTASSIUM.—M. AUBERT, in *The Lyon Médicale*, No. 13, 1885, proceeding from the fact that belladonna produces dryness of the throat, nose, and mouth, was led to employ it along with iodide of potassium as a preventative of the coryza which attends the long-continued use of this drug. His observations show that when the two remedies are used together intolerance is never experienced, and the iodide fails to produce its characteristic symptoms.

The quantity of belladonna necessary to produce such result is stated to be from one to two pills, each containing five-sixths of a grain of the extract.—*Annales de Dermatologie et de Syphiligraphie*, October, 1885.

MALARIAL GANGRENE.—DR. BLANC, in a contribution to the study of malarial gangrene, concludes:

1. Cold and serious pulmonary disease should be placed among those causes which play an important part in the production of local asphyxia and malarial gangrene.

2. Exposure of those suffering from malaria—their sudden transition from warm to cold countries—may occasionally produce local asphyxia and malarial gangrene.

3. The antiperiodics, quinine and arsenic, seem to constitute the best treatment for the complications attending the disease.

They may arrest and cause the local asphyxia to disappear completely; they may check and limit the gangrene, but here the specific action seems less sure and rapid than in the state of asphyxia. The well-known difference in the action of quinine upon visceral lesions, according as they are congestive or sclerotic, is here observed, though in a mild degree.

4. From a surgical point of view in the treatment of malarial gangrene it is advantageous to operate only when the progress of natural elimination has ceased.

The gangrene being dry, danger of infection is remote. The difficulty of at first distinguishing which are mortified and those simply the seat of prolonged local asphyxia, is a further reason for tardy operation.—*Archives de Médecine et de Pharmacie Militaires*, November 1, 1885.

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SATURDAY, NOVEMBER 28, 1885.

UTERINE INVERSION FOLLOWED BY NORMAL PREGNANCY AND CURE.

A CASE of inversion of the uterus, in which this condition did not prevent pregnancy, and at some time during the latter, spontaneous restoration occurred, is reported in *L'Union Médicale*, October 13.

The story as told by DR. PARRELL, of Dieppe, is briefly as follows: The patient, twenty years of age, a primipara, was attended in her labor by a midwife, who stated that the delivery of the placenta was difficult, the cord was very short, and strong tractions upon it were necessary to remove the former. The uterus, after the placenta was withdrawn, was in normal condition. The following night the patient had violent pains, and straining efforts were made as though she were in labor. The next morning, about twenty-four hours after delivery, Dr. Parrell was called, because the woman had retention of urine. He found the uterus inverted, and efforts were then made, and also at other times within the next few days, to restore it, but without even partial success. In six weeks the patient was up, and by wearing a Gariel's air pessary could walk, or stand, with comparative comfort. At each menstrual period she suffered with dysmenorrhœa and some menorrhagia, but the flow was not alarming. One year after the accident, she called upon her physician, stating that she thought herself pregnant, having then missed her monthly flow once. He examined, and found the uterus still inverted. She was not seen again for four months, when vaginal examination showed that the uterus was no longer inverted, and auscultation detected the sounds of the foetal heart. Four months subsequently she was delivered of a child, the accident following the first labor not being repeated.

Is the story credible? Velpeau said that he accepted the occurrence of the *vagitus uterinus*, because reputable persons asserted they had heard it, but if he heard it himself, he would not believe it. In this case, we think a good deal stronger proof than the statement of one individual, however intelligent and conscientious, must be adduced before the story can be accepted, and we wish the reporter had manifested a similar scepticism to that of Velpeau.

Three things in the narrative seem improbable, and a fourth is apparently impossible. First, the non-occurrence of severe menorrhagia is not the usual fact, at least in the absence of lactation, in case of uterine inversion: an inverted uterus suffers more readily from congestion, and exhausting hemorrhages follow, so that anaemia is the common result. Second, dysmenorrhœa is certainly not a probable accompaniment of uterine inversion. Third, spontaneous reduction of an inverted uterus is a very rare occurrence, there having been so far recorded, according to Denuce's statement in his *Traité Clinique de l'Inversion Utérine*, published two years ago, only fourteen cases: of course, the possibility of this event occurring in Dr. Parrell's patient, is not denied, but only its great improbability suggested.

Finally, we are asked to believe that the uterus remaining inverted, fecundation occurred, that the ovum was by some means detained at some point upon the surface of the organ, and a few weeks after the beginning of pregnancy the uterus restored itself, carrying the ovum from its external surface to its cavity, a detention and transportation which seem so utterly improbable, that the combination of the two may be regarded as impossible. It would be much easier to believe that the reporter committed an error of diagnosis, than that nature accomplished such wonders.

This, however, is not the first instance in which pregnancy is asserted to have occurred while the uterus was inverted. Chevreul, of Angers, communicated to Baudelocque such a case. He had recognized the inversion before the pregnancy, and found it still present after an abortion which happened at three months, an embryo three inches long being expelled. Chevreul thought that the pregnancy had taken place in a dilated oviduct. But such hypothesis is unnecessary if we admit the alleged facts in Dr. Parrell's case.

THE CURE OF ANGINA PECTORIS.

In the *Bulletin Général de Thérapeutique*, for September 30th, HUCHARD has an important communication on this subject. In the first place, he distinguishes most carefully the pseudo-anginal attack from the true, and his remarks upon treatment apply to the latter alone. He regards the disease as an affection of the arteries of the heart, and not a cardiac

neurosis, and quotes numerous facts in support of his position. As adherents to this view he claims Germain Sée, Potain, and others, and even Lancereaux, who formerly regarded it as a neurosis. Perhaps the majority of writers on the subject are of the opinion, which has had numerous supporters since the days of Edward Jenner, that the actual lesion of the disease is in the coronary arteries.

An arterial malady must be met by arterial medication, and as the blood-pressure is always increased in the affection, all remedies which heighten the vascular tension must be avoided, as ergot and digitalis. He refers to a curious observation of Wesley Mills, in which anginal attacks followed the local application of ergot. For the relief of the paroxysms, we have at our command amyl nitrite and nitro-glycerine, which cause vaso-dilatation, lowering of the blood-pressure, and increase in the vigor and frequency of the heart-beats. They relieve the angina alone, and are in no way curative, but Huchard believes that the iodides possess the means of so modifying the arterial condition, that a positive cure may be effected. In 1883 he reported six cases which had been greatly benefited by their use, and since then he has had twenty-five patients under his care, of whom fifteen have recovered completely, six have been much improved, and in four cases the effect of the treatment was negative. The possibility of any of these being pseudo-anginal cases was carefully excluded. This brilliant result he attributes in a great part to the action of the iodides on the sclerosed coats of the vessels. The chief element in success is perseverance in the treatment for many months, at least fifteen to eighteen; from fifteen to forty-five grains of the salt are taken daily, until some months have elapsed from the last attack. The administration of the drug may be kept up for as long as three years, to insure durable and certain recovery. He prefers the iodide of sodium for prolonged use, as the potassium salt, when employed for many months, has a weakening effect upon the heart; moreover, it is better borne and more readily assimilated.

Details are given of six cases, in which the results of the treatment, as narrated, are truly remarkable, and certainly justify the prolonged trial of the remedy in this terrible affection. The usual care must, of course, be exercised in these cases to regulate the diet, and remove all sources of mental worry and disturbance. The four cases of failure show that the remedy is not always curative, but in such instances the arteries may be in a state of calcification and past medication.

RUSH AS AN ALIENIST.

In his recently issued volume, *On the Insane in the United States and Canada*, DR. D. HACK TUKE

has an interesting preliminary sketch of Rush in relation to the insane. The *Medical Inquiries and Observations upon the Diseases of the Mind*, which appeared in 1812, was the first work on insanity issued in this country, and remains one of the most valuable of American publications on this subject. A fifth edition was published in 1835. While in some respects the views entertained by Rush, and the practice which he followed, did not differ very much from those in vogue at his time, Dr. Tuke claims for him that he distinctly recognized the corporeal nature of insanity, that he taught it to be a disease requiring medical, as well as moral, treatment, and that he gave to the profession and world an able exposition of the forms of mental disorder.

The extracts which Dr. Tuke gives in illustration of Rush's mode of dealing with refractory patients show how impossible it was even for so humane and gentle a man to free himself from the ideas and practices of his day. Still he was in many points far in advance of his time, if he did not quite come up to the standard of his noble contemporaries at the Bicêtre, and the York Retreat; for we find him advocating the employment of the insane, and taking active measures for the amelioration of the unfortunates in the basement cells of the Pennsylvania Hospital; and he seems rejoiced to be able to say that "the clanging of chains, and the noise of the whip are no longer heard in their cells."

After reading of his heroic treatment for mania, we wonder that any of the patients recovered—copious bleedings, purges, and low diet; and after the system was thoroughly reduced, "blisters, issues, erythines, the cold bath, and exercise"—and yet he seems to have been very successful.

The position taken by Rush in regard to moral insanity is that of advanced modern writers, and we are reminded of Maudsley, when, in his "Inquiry into the Influence of Physical Causes upon the Moral Faculty," he speaks of "moral derangement and of innate preternatural moral depravity, the result of defective organization."

Rush was an ardent temperance reformer, and was one of the first to plead for the establishment of curative institutions—*sober houses*—for dipsomaniacs. Only a few days ago, in recognition of his labors as a pioneer in this department, the interesting ceremony of planting a tree upon his grave was performed by one of the National temperance organizations.

Rush has been called the "American Sydenham," but Dr. Tuke prefers to call him the "American Fothergill," and he points out striking resemblances to his great London contemporary "in the independence of his medical practice; in acuteness of observation; in an enthusiastic love of the art of healing; in his incessant labor; in popularity as the

leading physician of the day in a great city; but, above all, in uniting with the functions of a physician the philanthropy which manifested itself in innumerable practical suggestions for the benefit of his kind."

POLYMASTIA.

ANCIENT fable taught that the Amazons burned, or compressed, the right breast in childhood, so that, its development being arrested, these warrior women could more readily use the bow. A less ancient mythology, for the cry, "Great is Diana of the Ephesians," was heard in the first of our centuries, represented Diana of Ephesus by a statue with two large, full breasts, and other breasts covering the chest and the abdomen; according to St. Jerome, the statue was the mystic image of nature, which is the mother and nurse of all living things. The Ephesian Diana, therefore, must be considered the first and best known example of polymastia.

Polymastia has been observed in both the male and in the female, but probably never was advantageous to either. Even a single supplementary breast, in at least one instance, was a woman's greatest misfortune, if the story as to Anne Boleyn be true; for she, who had a superfluous finger on each hand, had also a third breast, and it was this condition that aroused the hate of that most cruel of monarchs, Henry VII., a hate which could only be appeased by her death.

Polymastia is not a very rare anomaly. Puech has collected in France seventy-seven cases; in forty-six there were three breasts, in twenty-nine four, and in two five. Lichtenstein has in Germany collected one hundred and five cases.

If there be only one additional breast, it is usually below one of the other breasts, or in one of the axillæ; if two, they are generally in the axillæ; but if three, the third will be found above the umbilicus. The supernumerary breasts are usually pectoral, rarely are any abdominal, and in a few instances a breast has been found upon the thigh, upon the shoulder, and even upon the back.

Cicero found proof of divine wisdom, in that the number of breasts corresponded with the number of young born at one time; and hence a multiparous animal had many breasts, the sow and bitch being familiar illustrations. The problem of polymastia in the human female, probably never presented itself to his mind.

The presence of breasts in the human male is, according to Darwin, evidence that in the earlier stages of evolution lactation was performed by both sexes. Upon the same principle, polymastia would be considered an indication of atavism, a reversion to a former type, which, were it to become general, would disturb the very bones of Malthus.

DR. HOLMES AND HOMEOPATHY.

SEVERAL years ago, DR. OLIVER WENDELL HOLMES delivered a series of lectures upon "Homeopathy and Kindred Delusions." In reference to the former, he remarked that the most scientific men see through its delusions at a glance, and that while it might be practised by shrewd men, and by honest men, rarely, it must be feared, by those who are both shrewd and honest: as a psychological experiment on the weakness of cultivated minds, he regarded it as the best trick of the century.

We have been led to refer to these earlier utterances of the wise, learned, and observant doctor, as to homeopathy, by finding in the December number of the *Atlantic Monthly*, a brief, incidental reference to the same subject from his gifted pen—a pen, which, not in malice, but in kindness and love of truth, has done so much to expose medical error, an Ithuriel spear, which penetrates disguises, and reveals the shams and falsehoods concealed by them. The reference made by Dr. Holmes to homeopathy, which we present, shows that his opinion of this delusion has been in no wise changed. The following is an extract from a letter written by a young lady to one of her female friends; the two being among the characters in "The New Portfolio." In this letter, after referring to the possibility of her becoming a doctor's wife, she says: "I don't know but I should be willing to let him try his new medicines on me. If he were a homeopath, I know I should; for if a billionth of a grain of sugar won't begin to sweeten my tea or coffee, I don't feel afraid that a billionth of a grain of anything would poison me—no, not if it were snake-venom; and if it were not disgusting, I would swallow a handful of his *lachesis* globules, to please my husband. But if I ever become a doctor's wife, my husband will not be one of that kind of practitioners, you may be sure of that, not an "eclectic," nor a "faith-cure" man.

Alas, that a woman entertaining such just sentiments in regard to medicine, should find her affinity in a clergyman, instead of in one of the graduates in medicine of Harvard.

SOCIETY PROCEEDINGS.

NEW YORK STATE MEDICAL ASSOCIATION.

Second Annual Meeting, held in the hall of the Murray Hill Hotel, New York, Nov. 17, 18, 19, and 20, 1885.

TUESDAY, NOVEMBER 17TH.—FIRST DAY.

AFTERNOON SESSION.

DR. HENRY D. DIDAMA read a paper on *TUBERCULAR CONSUMPTION; IS IT EVER HEREDITARY?* in which he quoted the opinions of different authorities on the subject of a hereditary tendency, hereditary diathesis, etc., and also the results of post-mortem exami-

nations by various pathologists, and said that in examinations of the bodies of thousands of foetuses, none were found to have tubercle, which weighed heavily against the hereditary theory. He also quoted the statistics furnished by insurance companies, in which it appeared that the majority of cases of phthisis occurred in persons whose parents had not suffered from the disease.

The following are the conclusions which the author reached: First, that tubercular disease is not inherited. Second, that if a special tendency to the disease be transmitted, the term liability better expresses the idea than the term tendency. Third, many conditions, as poor and insufficient food, damp and impure air, stinted sunlight, and certain occupations, favor the development of the disease. Fourth, two conditions are almost indispensable—abundance of bacilli and an inviting asylum for their development, whether it be an inherited or an acquired vascularity.

An important indication is to place the newly born of a phthisical mother under the charge of a healthy wetnurse, who should occupy a room entirely secluded from that of the consumptive members of the family. This gives an opportunity to strengthen the feeble constitution and to eradicate a liability to the development of consumption. If a syphilitic taint exists or is suspected, the author advised antisyphilitic treatment, not only with a view to cure the syphilis, but also with a view to strengthen the constitution and guard against the development of phthisis.

DR. ROCHESTER said that some years ago he made an autopsy on an infant which died three weeks old, and he found one lung crammed with miliary tubercles, and in the other was a cavity the size of a hickorynut. The mother was healthy; the father had died before the baby was born. In another case in which the father died before the birth of the child, and the mother was a healthy woman, having no tuberculosis, the child died at eighteen months of age, having had for a long time before death every indication of pulmonary phthisis, and recently of tuberculosis of the vertebrae. In the light of these cases he could not help but believe that, sometimes at least, phthisis is hereditary. He admitted, however, that many people have phthisis whose parents were free from the disease. The paper was further discussed by Drs. Colvin, Pomeroy, and others.

DR. SIMEON TUCKER CLARK, of Niagara County, then presented a paper on

PSOITIS AND PERPSOITIS: THEIR PATHOLOGY AND DIFFERENTIAL DIAGNOSIS,

in which he first referred to the paucity of the literature of the subject, and the difficulties attending a differential diagnosis, and then proceeded to give the clinical histories of three cases which had come under his personal observation. In all of the three cases there was a history of traumatism. In the first case the patient, a woman without children, aged forty-three, had received a blow on the abdomen, which was followed by severe pain in the suprapubic region, two inches from the median line. The physician who examined her recognized a hard lump, from which the pain seemed to proceed. Vaginal examination resulted negatively. Dr. Clark saw the patient later, and became convinced that there was suppurative inflammation of the psoas. Finally, pus was removed, and thirty-one aspirations were made

before a cure was finally effected. The pus did not contain a trace of phosphate of lime.

The second case was in a young man, whose condition originated in strains during roller skating. When he consulted his physician, Dr. Gould, he complained of pain in the region of the hip, and had a rapid, bounding pulse, the temperature 105° . Afterwards copious perspiration, of acid odor, etc., led to the diagnosis of rheumatism; but later a boggy tumor appeared in the suprapubic region. An exploratory puncture gave exit to foul gases, followed by pus. An opportunity to make an autopsy was afforded in this case, and a psoas abscess was found, which had led to denudation of the bone beneath; and there was also some softening of the vertebrae; but it was evident that the disease had originated in the muscle, and not in the vertebrae.

The third case was that of a man, who first attributed his difficulty to rheumatism, from which he was a frequent sufferer, but it was learned that he had injured himself in the region of the psoas while throwing filled sacks upon a wagon. He complained much of pain in the neighborhood of the thigh. The pain was relieved by a local anaesthetic. A suprapubic tumor developed, which, at a time when Dr. Clark had intended to open it, burst spontaneously into the bladder, and a quart of healthy pus was evacuated per urethram. Later, another opening for the escape of pus was made by the knife, above Poupart's ligament, and then pus ceased to escape through the bladder, and, finally, through the artificial opening, and the patient went on to complete recovery.

DR. CLARK pointed out, in the differential diagnosis, history of traumatism, pain in the region of the thigh and leg, the posture of the patient, avoiding extending and rotating the leg, the suprapubic tumor, and, on aspiration, obtaining laudable pus. In each instance the syringing of the pus cavity was followed by washing out with solution of carbolic acid.

DR. FREDERICK HYDE, of Portland, believed that many cases of supposed vertebral disease are really cases of the kind related by Dr. Clark, and he urged with great earnestness the importance of making a careful search in suspected cases for a history of traumatism, for a pelvic tumor, and for pus by repeated use of the aspirator, if necessary; for the train of evils following a change of the laudable pus, which was first present into unhealthful pus, is too long and serious to permit of postponement of the case, with the idea that eventually the symptoms will demonstrate it to be a case of Pott's disease. If taken in the early stage, a cure can be effected and the bones will escape implication.

DR. CRONYN, of Buffalo, had seen two or three cases of psoitis, and said that in diagnosis valuable aid will be found in putting the patient under the influence of chloroform, flexing the thigh, and searching for fluctuation over the region of the psoas muscle. History of traumatism is important in diagnostinating psotitis. Let the pus escape, then keep the leg in the extended position, bringing the walls of the sac together, and union will rapidly take place.

DR. MOORE, of Rochester, thought that where it can be shown that the disease has begun with a traumatism, it is unnecessary to try to explain its occurrence on the supposition of a tubercular inflammation. An acute disease may become chronic, and, of course, when this occurs, there is a good opportunity for tuberculosis to

develop. But the commencement may be in fibrous tissue, thence to the bone.

DR. CHARLES W. BROWN, of Elmira, then opened a discussion on

SHOCK, AND THE EFFECTS OF INJURIES UPON THE NERVOUS SYSTEM.

He described the symptoms present in shock, and referred briefly to the explanations which had been suggested of its nature. He had seen a few cases of what had been termed "insidious" shock, in which the patients did not suffer pain in proportion to the seriousness of the injury, and were of a cheerful state of mind, although there was almost a diagnostic melancholy expression upon the face, which seemed to foretell death. He also referred to individual susceptibility, and said that some persons of fleshy habit and apparent health will succumb sooner to a minor injury producing shock than some others of delicate habit and nervous temperament, the nervous system in the latter giving way less readily. Shock is less in persons suffering from chronic disease, but such persons are less likely to regain strength and make complete recovery afterwards, than are those of previous good health, who may be able to withstand the first influence of the injury upon the nervous system. There are two indications in treatment, the first to modify the effects of the shock, and the second to control superinflammation. The use of heat and stimulants received some attention.

DR. FRANK H. HAMILTON, of New York, continued the discussion with a short paper, read for him by Dr. Birmingham. His remarks were limited to surgical shock, which, he said, may be defined as a general paresis of the nervous system induced by external violence. One point which received his attention was what is called railroad shock. Many of the symptoms which have been described as belonging to railroad shock were seen in certain cases of shock which occurred before railroads had come into existence. But, if he admitted that the introduction of railroads had brought into existence a particular kind of shock, Dr. Hamilton thought it is due to that sort of injury to the spinal column which is likely to occur in railroad accidents, resembling the cracking of the lash of a whip. In these cases he believed that the injury is not primarily in the nature of a shock resulting from commotion of either peripheral or central nerves, but that those structures which lie external to the spinal marrow, and contribute more or less to its support and protection, of which the ligaments are the chief factors, are those which suffer direct injury, and from which inflammation subsequently progresses to the spinal marrow itself. As to the treatment of shock, bring about reaction by rest, in some cases by warmth and stimulants.

DR. EDMUND S. ARNOLD, of New York, took the view that shock is due to an impression produced upon the sympathetic nervous system, tending to stop its function, and in doing so stopping nutrition of vital parts over which that system of nerves presides. Sudden death occurs if such influence is sufficient entirely to destroy the function of this system of nerves or ganglia, as in death by lightning-stroke. Another illustration, he thought, is in death by hydrocyanic acid. If there is an influence upon the heart in this case, he thought it is directly due to suppressed function of the sympathetic system which

presides over its action, and other parts of which system of nerves are also affected at the same time.

DR. CARLOS F. MACDONALD reported a case of

INSANITY FOLLOWING AN INJURY OF THE HEAD ; CEREBRAL CYST ; OPERATION ; RECOVERY.

The patient was a man who received a pistolshot on the frontal region, inflicted by his own hand. The man was sent to prison, where he developed symptoms of insanity, and had to be confined to a cell. For a considerable period of time, however, he had been required, and was able, to do prison duty, but manifested an impulsive temper. It was decided to trephine. At the seat of the wound, which was half an inch in diameter, a fourth of an inch in depth, located over the right first frontal gyrus, corresponding to the junction of the anterior and middle third, three-eighths of an inch to the right of the median line. The patient was etherized. The wound was found traversed by dense fibrous tissue, no bone intervening between the dura mater. A fine hypodermic needle was introduced, and nothing was withdrawn until the fourth puncture, when about two drachms of serum were withdrawn. The fluid contained a few blood corpuscles, which were accidental. Nothing more was done than to close wound with suture and dress antiseptically. The patient on coming from under the influence of the anaesthetic was in his natural mind, was greatly pleased with relief from pain at the seat of the injury, and shortly afterward gave a satisfactory account of his case from the beginning, excepting a period when he was unconscious. He went on to complete recovery, with permanent relief from cerebral symptoms, excepting a part of a day. It was learned that the physician who saw him after the shooting had removed the pistol-ball; he found no fracture of the bone, or spicule.

NIGHT SESSION.

DR. AUSTIN FLINT opened the

DISCUSSION OF PNEUMONIA

with a paper, in which he propounded the following eight questions:

i. Is acute lobar pneumonia a primary local inflammatory disease, or is it an essential fever, the pulmonary affection being secondary thereto and constituting its anatomical characteristic?

Since 1877, when he read a paper in support of the doctrine, that acute lobar pneumonia is not a local affection, but an essential fever, that doctrine has been gaining ground. This view is supported by the following facts: First. Acute lobar pneumonia is characterized by an enormous exudation into the pulmonary alveoli, and this exudation may be rapidly absorbed, leaving the tissues intact. This anatomical fact, he said, has no analogy in local disease. Second. Acute lobar pneumonia never persists and becomes a chronic affection. Third. It is never referable to any appreciable local condition, nor is it possible by any form of traumatic injury to produce the affection. Fourth. Ordinary causes of local disease are not capable of producing acute lobar pneumonia. The traditional belief that the affection may be produced by a cold is without foundation, and is being abandoned, even by the Germans. Fifth. That a special or specific influence is invariably the cause of

acute lobar pneumonia, is rendered probable by its occurrence at certain seasons, greater frequency in certain climates, occurrence at times as an epidemic disease. Sixth. It differs from acute primary local inflammation in that at the outset there is a pronounced chill. Seventh. In the course of the disease, the temperature and associated febrile phenomena bear no constant relation to the local affection. Eighth. Experience shows that acute lobar pneumonia responds better to treatment addressed to the fever, than to the local affection.

2. What facts and rational grounds, with our present knowledge, can be cited in support of the doctrine, that acute lobar pneumonia depends on the presence of a specific microorganism?

Dr. Flint left this question for discussion to Dr. Jane-way, but expressed his belief in a specific microorganism as the cause of the disease.

3. What conditions or circumstances incident to acute lobar pneumonia, tend to render the disease fatal?

The present or previous existence of certain other diseases, renders the prognosis more unfavorable, and certain conditions, as empyema, pulmonary gangrene, malarial miasm, etc., are more likely to develop in one who has been reduced by pneumonia. Of special conditions rendering danger of a fatal issue in the course of the disease greatest, the author mentioned heart clot and heart failure.

4. Are there known remedies or therapeutic measures capable of arresting this disease, or of exerting a curative influence by either shortening its duration or conducing in any way to a favorable termination?

Dr. Flint had reason to believe, that quinia had been of benefit in shortening or exerting a favorable influence upon acute lobar pneumonia. But he could not enter fully into discussion of the treatment.

5. Is bloodletting ever indicated in this disease, and, if so, what are the circumstances indicating and contraindicating this measure of treatment?

Acute lobar pneumonia tends intrinsically toward recovery. Treatment in general should be for special indications. He believed there are circumstances in which bloodletting will prove of benefit, and that benefit will be most likely to manifest itself in relief of oppressed heart-action. Contraindications of bloodletting are previous existence of enfeebled affections, and the anæmic state. A plethoric condition and a bounding pulse are among indications for this measure. The collection of cases made some years ago by Lewes, in which there were twenty-eight deaths out of a total of seventy-eight cases in which bloodletting was resorted to, showing a high mortality; but the cases were not selected.

6. Is alcohol useful in the treatment of cases of acute lobar pneumonia, and, if so, what are the indications for its use, and how is its use to be regulated as regards the quantity given, etc.?

The author regarded alcohol as indicated wherever there is required the supporting plan of treatment; wherever there is a tendency to asthenia, it should be begun tentatively.

7. To what extent is it safe and useful to employ antipyretic measures of treatment in cases of acute lobar pneumonia, inclusive of the cold bath, sponging of the body, or the wet sheet?

Dr. Flint spoke specially as to his experience with

the wet sheet, which he had employed in three cases, with favorable results.

8. Do relapses of acute lobar pneumonia ever occur during or shortly after convalescence, and does this disease involve any special liability to other diseases, or sequels.

The first part of the question, the author answered in the negative, and said that this fact is in favor of the view that the disease is an essential fever, for local diseases have relapses. But one attack does not exempt against subsequent attacks.

The first question propounded was discussed in brief papers by Drs. Didama and Ross; the second by Dr. Janeway, who expressed regret at having been unable, on account of sickness, to make further investigations, personally, regarding the influence of a microorganism in the causation of pneumonia. He gave a synopsis of the literature of the subject. The third question was discussed by Drs. W. H. Robb and H. M. Biggs; the fourth by Drs. T. F. Rochester and Van de Warker; the fifth by Drs. S. J. Clark and C. S. Wood; the sixth by Drs. John Shady and E. D. Ferguson; the seventh by Drs. G. Griswold, C. G. Stockton, and W. S. Fuller; the eighth by Dr. J. G. Orton.

WEDNESDAY, NOVEMBER 18TH.—SECOND DAY.

MORNING SESSION.

DISCUSSION ON PNEUMONIA.

DR. CHARLES G. STOCKTON discussed the seventh question propounded by Dr. Flint in a brief paper, and said he thought the special manner in which the temperature should be lowered would depend upon the individual case; a single antipyretic would not answer in all cases of elevation of the temperature. He had sometimes used quinine and antipyrin successfully in the same case. Regarding antipyrin, he recommended its use in from fifteen to twenty grain doses, repeated once in eight to twelve hours. When so used, it had never produced any toxic effects upon the heart, and it had had the desired effect upon the temperature.

DR. E. D. FERGUSON's experience with antipyrin had been similar.

DR. J. G. ORTON discussed the eighth question in a brief paper. He had never seen an unqualified case of relapse of acute lobar pneumonia, during or shortly after the period of convalescence. But one attack seemed to predispose to subsequent ones in the same lobule. He thought pneumonia is a non-infectious essential fever. He also spoke of complications and diseases to which pneumonia predisposes.

DR. F. HYDE had in several cases found evidence at autopsies in cases of acute lobar pneumonia, that there had been early and persistent thrombosis as well as embolism of the veins, and in two cases there was embolism in the arteries as well. This condition, he thought, occurs more frequently than is supposed, and we could see why remedial measures proved of no avail, and why death occurred so early in the course of the disease.

DR. ELY VAN DE WARKER, of Syracuse, then read a paper on the

MEDICO-LEGAL BEARING OF PELVIC INJURIES IN WOMEN,

in which he said that actions at law to recover damages for injuries sustained to the pelvic organs in women

were becoming quite frequent and involved large sums of money; they were usually brought against corporations, particularly cities and villages, and railroad companies. He cited three illustrative cases, by which it appeared that the facts of the case, could they be obtained by a thorough medical examination, were in favor of the defendant, but the verdict was likely to be in favor of the complainant. Some of the women attributed conscientiously but erroneously their symptoms to the injury sustained, but most of the cases were of a fraudulent nature. In all perhaps there would be found a history of previous pelvic inflammation, or affections which would fully account for the symptoms present. The impossibility of a fall, of some nature, which was the usual accident in these cases, producing such concussion of the healthy uterus and pelvic organs as to cause permanent displacement of the womb, or swelling and pelvic inflammation and abscess, was evident to the physician but not to the simple jurymen, whose sympathies were appealed to by a suffering woman standing before him, while the other party to the action was a heartless corporation with a supposed unlimited supply of money.

DR. AUSTIN FLINT, JR., then read an address on
SOME OF THE RELATIONS OF PHYSIOLOGY TO THE PRACTICE OF MEDICINE.

He said that physiology is the only rational basis of scientific medicine; this is true, even should we use the term medicine in its widest signification, including in it the practice of surgery, gynecology, and pathology. A knowledge of anatomy and physiology is a most important requisite in making a correct diagnosis. The necessity for a knowledge of physiology is evident in the study of valvular lesions of the heart, for our ability to diagnosticate heart lesions depends upon our familiarity with the functions of the heart and the sounds produced by the blood-current in health. Dr. Flint analyzed the heart sounds in different diseased conditions of the heart in proof of his assertion that a knowledge of physiology is an important element in scientific medicine.

AFTERNOON SESSION.

DR. ISAAC E. TAYLOR read a paper on
RECTO-LABIAL OR VULVAR FISTULÆ: THEIR CAUSES AND TREATMENT,

in which he spoke of the comparative rarity of the condition. It is very liable to begin with a vulvar abscess, depending upon an inflammation of the vulvar glands, perhaps excited by injury during coition, masturbation, labor, direct injury, or in cold. A small tumor may exist in the labia prior to breaking down into an abscess, perhaps quite movable, and leading to the suspicion of an ovary in Broca's canal. The history of such a case, seen by the author, was given. The tumor constituting the suspected ovary broke, and gases and feces escaped by the small opening. Huguer's plates were shown in illustration of the subject-matter of the paper. The pathognomonic symptom of vulvar fistulae is the escape of air and thin feces. The vulvar opening is usually small—perhaps so small that it will be found with great difficulty. As to the treatment, he adopted the ligature, being in general the method employed by Barton between 1835 and 1840.

The method is simple and efficient; and, in view of the great and serious difficulties liable to attend the use of the knife, he thought it deserves much more general employment. The elastic ligature is to be preferred.

DR. EDWARD M. MOORE then read a paper on

RECURRING LUXATIONS.

That luxations are likely to recur, he would not attempt to prove, for it is a well-known fact. Recurrence of the luxation takes place often not as a result of violence, but of the action of different forces not connected with violence. Some replacements are maintained with great difficulty. Attention was then called to the tendency of recurrence of luxation in different joints, and to the manner of preventing this accident. To prevent recurrence of luxation in the clavicle the elbow is thrown backward and retained in that position by binding the hand to the side by means of adhesive plaster, or, what is better, by means of his figure-S bandage; thus the scapula will be carried nearer the vertebral column.

Several interesting cases in which recurrence of luxation took place in the shoulder-joint were related, and the manner in which the accident is liable to occur was pointed out. His views with regard to luxations occurring in this joint were made clear by certain experiments which he had performed after removal of the flesh about the shoulder, and bringing forces applied upon the arm and forearm to bear upon the ligamentous structures. His experiments illustrated incidentally how it is that in many cases of sprains or supposed injury to ligamentous filaments, the symptoms are as serious and more prolonged than in fractures of bone; for, as was shown in these instances, the ligament gives way only by taking with it a portion of the bone to which it is attached. In luxations at the shoulder, either upon the dorsum of the scapula or into the axilla, examples are met with in which maintenance of reduction is found difficult. The manner in which the luxation takes place is by gravity—allowing the arm to fall, especially if at the same time the arm be turned more or less forcibly outward. Touching upon recurrence of luxation at the hip-joint, the author cited an interesting case which had come under his observation, and had been reported, with two others, by Bigelow, in which a soldier acquired the tact of dislocating and replacing the head of the femur by a certain twisting motion of the body.

DR. FREDERICK HYDE read a paper on

THE DIFFERENCE IN THE SYMPTOMS OF STRANGULATED OBLIQUE INGUINAL HERNIA,

in which the following were the principal points developed:

1. In proportion to the length of time an inguinal hernia existed would the symptoms and signs of strangulation be mild and chronic.

2. In a case of long-standing inguinal hernia in which signs of stricture of the bowel are obscure, there not being evidence of total obstruction of the canal, often it is not safe to wait for fecal regurgitation before deciding that strangulation exists.

3. When strangulation occurs at the first protrusion, the symptoms of strangulation will be found to be more marked.

4. If hiccup and fecal vomiting existed from nearly the beginning of the symptoms, no time is to be lost, herniotomy should be performed at once.

5. If a swelling exists with symptoms of obstruction of the bowel, the patient complaining of severe pain in the abdomen, but of none in the tumor, and had hiccup, although there is absence of marked general disturbance, a fair trial of taxis should be made, and that failing to reduce the tumor, herniotomy should not be delayed. This remark was based on an interesting case, the history of which Dr. Hyde gave in detail. No fecal vomiting occurred, no pain in the tumor even after taxis, but there was some pain in the abdomen and hiccup. Because of the mildness of the symptoms, the consulting physicians delayed the operation more than twelve days, and when it was finally performed the strangulation was found to have existed within the abdomen. The patient died.

6. If no strangulated portion be found within the external sac, the finger should be passed internally and adhesions sought for in the neighborhood of the opening.

7. Too long a trial of taxis before dividing a stricture should be guarded against, as it prepares the way for the death of the patient after herniotomy.

8. After stercoraceous vomiting has set in taxis should not be supplied, but herniotomy should be performed at once, although the prognosis is unfavorable.

9. If after opening the sac the omentum is found smooth, and no intestine can be detected, the omentum should be opened to learn whether it may not contain a strangulated portion of intestine. It is unfair to speak of herniotomy as a dangerous surgical operation *per se*. The danger attending the operation is due to the condition of the sac and its contents and to taxis and delay in operating.

DR. J. W. S. GOULEY read some notes on the same subject, in which he reached the following conclusions:

1. When doubt arises in the mind of the surgeon respecting the existence of strangulation of the intestine or omentum in case of incarcerated hernia, it is his duty to give the patient the benefit of the doubt by at once resorting to the operation of herniotomy.

2. Delay in relieving the strangulation is often fatal, while herniotomy in a case in which no strangulation exists is not usually harmful.

3. Medicinal treatment is often delusive, and local applications, such as opium, tobacco poultices, ice, etc., are in most cases worse than useless.

4. Persistent taxis is infinitely more dangerous than herniotomy, and such taxis even when it is followed by reduction of the hernial protrusion is often the cause of fatal peritonitis.

5. Another, though rare, effect of violent taxis is the reduction *en masse* of the hernia in its state of strangulation, and its result is known.

6. As a general rule, two minutes of gentle taxis, the patient being in a hot bath, will settle the question as to the possibility of safely reducing the hernia.

7. Therefore, it may be said with propriety that the less taxis, the less ice, the less other topical applications, the less opium, the less general or special meddlesome interference which often do serious injury to the intestine, the better the chances of recovery in the event of herniotomy. This is particularly the case in femoral hernia.

He said he had abstained from incising the neck of the sac in femoral hernia, but had made divulsion by simply insinuating the index-finger through the free opening made in the sac until it entered the abdominal cavity, and had had no trouble in effecting reduction of the intestine, the object of the procedure being to avoid division of the obturator artery should it be abnormally situated. He coincided with Dr. Hyde that hernia is not *per se* a dangerous operation. Dr. Gouley said further that if it seemed necessary in a case of inguinal hernia, after herniotomy, he would open the abdominal cavity in order to relieve the strangulated intestine.

NIGHT SESSION.

DR. ISAAC PURDY presented

A CURSORY REVIEW OF THE EPIDEMIC AND ENDEMIC DISEASES OF SULLIVAN COUNTY DURING THE LAST THIRTY-FOUR YEARS.

The first years of the period, commencing in 1850, pneumonia and fevers of asthenic type prevailed, in which it was common to bleed, to employ cathartics, diuretics, and a depleting system of treatment; and this course seemed to be indicated as being followed by the best results. About the beginning of 1854 typhoid fever was heard from in the distance, and soon reached Sullivan County, and for several years pneumonia and other forms of disease took on a typhoid character, and this period was marked by the fact that in nearly all cases the asthenic form of disease showed itself; a depleting course of treatment was followed by the worst results. Close attention had to be given to the diet, encouraging nutrition, and to checking excessive discharges. About 1860 diphtheria began to prevail in Delaware, and marched up the Delaware River, and existed in Sullivan County in the epidemic form for about five years, being very violent, and carrying away many patients. The odor of persons suffering from the disease was peculiar, and could be recognized at a great distance from the sick-bed. In the author's opinion, it was a constitutional, not local, affection, although the local deposit, constituting diphtheritic croup, was present.

About 1862-63 it was present in the form of black fever, petechial fever, etc., being in places very malignant. Afterward it again appeared as genuine diphtheria of the throat. In these cases they applied turpentine and sweet oil to the throat at night with benefit. During a part of this period dysentery prevailed, first severe, then of mild type. Scarlet fever was present at intervals of about five years, sometimes of severe, sometimes of mild character. Rubeola or measles had occurred at different periods, but in general required little treatment. Occasionally diphtheritic cases occur up to the present time, but the contagion was generally brought from afar. Typhoid fever continued to prevail more or less, especially in the fall months; typhoid pneumonia during the winter, up to 1881. The spread of typhoid fever up the Hudson and its tributaries occurred at one period. The highest point was situated 1200 feet above the level of the sea at Montauk. The treatment consisted chiefly in moving the bowels, particularly by calomel; and then genuine as a sheet-anchor.

(To be concluded.)

CINCINNATI ACADEMY OF MEDICINE.

Stated Meeting, November 16, 1885.

THE PRESIDENT, SAMUEL NICKELS, M.D.,
IN THE CHAIR.

(Specially reported for THE MEDICAL NEWS.)

DR. BERNARD TAUBER read a paper on

THE LOCAL TREATMENT OF LARYNGEAL TUBERCULOSIS.

(See page 596.)

DR. A. B. THRASHER gave expression to his disbelief in the ability of any plan to prolong life in cases of laryngeal phthisis. The instances in which a favorable result has been claimed for a certain plan of treatment, usually depend upon errors in diagnosis. With reference to the relation of the laryngeal affection to phthisis of the lungs, referred to without comment by the essayist, the speaker expressed the belief that the disease generally, if not always, commences within the chest, the affection of the larynx being in the same proportion a secondary disease. Prolonged expiration, as referred to, is the very earliest indication of the presence of disease in the lungs. It is further possible, in many of these cases, to effect a cure of the disease simply by proper hygienic treatment without the use of remedies. The local treatment, in these cases, is not of much importance with regard to the final result of the case, and in making a choice of remedies we should confine ourselves to those which will give the most complete temporary relief from suffering. Inhalations of carbolized steam have been employed with benefit, but, so far as the speaker was aware, the remedy had not been employed to so vigorous an extent as was recommended in the paper. The production of anaesthesia in the larynx in the second stage of tuberculosis is of great importance. A number of agents have been employed for this purpose. Dr. Carl Seiler claims to relieve the pain by the local application of the nitrate of silver. If employed, the remedy must of course be used in concentrated solutions, because of the painful effects otherwise produced. In the treatment of the third stage he agreed with the authors who recommend the use of morphia by insufflation combined with starch powder. This method should not, however, be practised within a shorter interval than an hour before a meal, for it requires fully an hour to obtain the full effect of the remedy. The relief afforded by it is only transient, it is true, but the method has the advantage of being easy of application, not requiring the skill of a specialist, or indeed of the physician.

The opinion that tuberculosis, when found in the larynx, is always a secondary affection, the speaker believed is further demonstrated by the fact that no post-mortem examinations have yet been conducted upon persons dying with laryngeal phthisis, in which the affection had been positively diagnosed during life, where the disease was not found also in the lung.

DR. JAMES G. HYNDMAN remarked that the hopes offered us by the essayist of being able to cure a disease whose prognosis is almost universally fatal, would be very cheering, did not the combined and uniform experience of the leading specialists of the world prove them fallacious.

Mackenzie knows of but four cases in which he had reason to believe a cure was effected, and these cases were proven to be tubercular by the presence of well-marked signs of pulmonary disease. While not denying the possibility of tuberculosis primarily affecting the larynx, the speaker thought it quite improbable in view of our present knowledge upon this subject, and quoted the results of Heinze's numerous observations to the effect, that no post-mortem examination had ever been made in case of laryngeal phthisis which did not show well-marked evidences of the disease of the lung, and the pulmonary affection appeared in all those cases under his observation to have been well advanced. In the earlier stages of laryngeal tuberculosis, the local appearances are such as may result from numerous conditions causing malnutrition, and it is only their association with distinct evidence of pulmonary damage which renders positive a diagnosis of laryngeal phthisis. The cures effected by the essayist were of cases in the earlier stage, and it is much to be regretted that the reporter gave no positive statement of the condition of the lungs, for it is in just these cases we most require the corroborative evidence of pulmonary disease and thus be able to exclude all danger of mistaking the cure of a trivial, for one of a very dangerous malady. The speaker agreed in the main with the essayist's plans of local treatment, but believed that it must be mainly palliative and that our efforts must be principally directed to the primary disease in the lungs and the general weakness resulting from the combined pulmonary and laryngeal affections.

DR. E. G. ZENKE thought it erroneous to consider phthisis of the larynx only a secondary affection. M. Jaccoud, among others, advocates the doctrine that phthisis can be cured if properly treated. Whether or not the bacillus is the cause of the disease, is of little practical bearing upon the treatment, so far as we know at the present time. If the disease can be removed from the lungs, it should certainly be more easily eradicated from the larynx; and a man's skill in the treatment of the disease will consist in his ability to apply proper remedies to the larynx.

DR. JAMES M. FRENCH expressed his preference for the term tuberculosis instead of the word phthisis, which appeared to be the favorite with the speakers of the evening. The former term is more in accord with modern nomenclature, as well as with the more recent views on the pathology of the affection. For we now look upon the disease as one having a special dependence upon a definite microorganism, and not simply as a destructive process. He further objected, *a priori*, to the view that laryngeal tuberculosis is always a secondary affection. If the disease owes its origin to a germ, we can readily understand how it may be produced in the mucous membrane of the larynx as readily as in that of the smaller bronchi, and there is no more reason for pronouncing the affection secondary when found in the larynx than when found in any other tissue of the body, where it is of frequent occurrence. It is only when an early stage of the affection is observed in the larynx, in connection with a more advanced invasion of the lung, that it should be pronounced secondary. If, however, the disease of the larynx is advanced, and that in the lung is indicated by only such signs as a slight prolongation of expiration, in-

crease of vocal or whispered resonance, or a faint crepitant in some part of the lungs, all recognized as among the earliest manifestations, we may with propriety consider the pulmonary lesions secondary to the laryngeal, or simply coincident to them.

With reference to the local treatment, the experience of the speaker did not warrant his expression of an opinion. But as it is always advisable to combine with the local treatment some course of general medication, he desired to express his confidence in the administration of the bichloride of mercury in combination with the sulphate of strychnine, from which he had in several instances obtained unquestionably good results, in both the early and median stages of the disease.

DR. HYNDMAN said that it is an easy matter for one to state his inability to understand why a lesion is or is not primary in a certain organ, but that so long as statistics do not coincide with the view, it can have little bearing on the result. The statistics to which he had just called attention were to his mind sufficient to indicate that the occurrence of primary tuberculosis of the larynx is exceedingly rare. He desired also to call attention to the use of morphia, dissolved in glycerine and water, as a local application to the larynx. The glycerine renders the effect more lasting by retaining the remedy longer in contact with the mucous membrane.

DR. ZENKE remarked that in all probability the reason for not finding tuberculosis unassociated with the pulmonary affection upon post-mortem examination, lay in the fact that tuberculosis of the larynx is rarely a fatal disease; and although it may exist for years, the death is usually the result of lesions elsewhere, independent, it may be, of the laryngeal affection.

DR. JOSEPH RANSOHOFF was gratified to hear one of the speakers support the ground that laryngeal tuberculosis is not of necessity a secondary affection. That such a position is tenable, he firmly believed. Only a few weeks ago he was consulted by another physician with regard to the propriety of operative measures, whether it should be to open the larynx and remove a tubercular deposit, or totally extirpate the organ. The disease was very advanced and progressive in character, but the most thorough examination of the lungs failed to reveal the presence of any pulmonary disease. That the disease was not one of syphilis of the larynx, was well established by the fact that it had been examined by several gentlemen of skill, among them the speaker of the evening, and by each pronounced unmistakably tubercular in character. The disease, when seen by the speaker, had progressed to the extent of destructiveness, producing dysphagia, and even stenosis.

With reference to the statistics that have been quoted, the speaker said that while it is perfectly proper that we should be guided to a certain extent by the views of such men as Morell Mackenzie, it is yet highly probable that within the course of five years their views will undergo considerable modification. Their views have been derived from clinical experience, but at present there is a tendency to disregard clinical experience for a more scientific view of disease. We have tubercular disease in nearly all other parts of the body, including the skin, tongue, pharynx, tonsil—and why not in the larynx? And what is of still more value, a number of primary causes have been recently reported.

DR. ROBERT W. STEWART reported a case of tubercular disease of the larynx without other discernible lesions, in which recovery followed the patient's removal to more healthy climates—Florida in winter and Colorado in summer. The speaker thought it a matter of little importance whether phthisis is tuberculous or not, and in some cases he was inclined to doubt their identity. Further it does not necessarily follow that, where tuberculosis of the larynx is found associated with advanced tuberculosis of the lung, the disease commenced in the latter organ. There is sufficient ground for considering phthisis sometimes of primary origin in the larynx.

DR. TAUBER, in closing the discussion, called attention to the fact that in his paper he had not quoted an authority. He had desired to express only his own experience. In a review of the literature of the subject he had found eight cases of primary tubercular infection of the larynx, but this was a question which he had no intention of raising by his paper.

With reference to the anaemic stage of laryngeal tuberculosis, he agreed with the speaker who stated that such an appearance may be associated with a number of other conditions, but when it is associated with the inactivity of the larynx and a relaxed condition of the cords, with the various subjective symptoms usually seen, it is almost pathognomonic of the disease. As for the use of the nitrate of silver, he had employed it in solutions of varying strength, up to 140 grains to the fluidounce, but had found its effect not to be sufficiently lasting. The point he desired to lay most stress upon is the treatment of the third stage of the affection by the method he had described. It enables the patient to eat and thus to retain his strength, in this manner prolonging his life.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, November 3, 1885.

THE PRESIDENT, W. P. BIRDSALL, M.D.,
IN THE CHAIR.

DR. LEONARD WEBER read a paper on

A CASE OF OPHTHALMOPLEGIA EXTERNA.

Peter W., age 52, father of a number of apparently healthy children. Has worked in an iron foundry for the last thirty-two years. His mother died of pulmonary hemorrhage at 64 years of age; his father died at 53 of typhoid fever. Has a brother and sister living, in good health. He has never had syphilis. Fourteen years ago he was under treatment for haemoptysis, accompanied by fever and other signs of acute lung trouble. But he recovered in the course of a year or so, and has been able to continue his work since. Nevertheless, the signs of old pulmonary trouble are well marked in the interscapular space, particularly on the right side. In the course of years the patient sustained various injuries about the head, but no fracture of the skull. At no time did his condition give any evidence of renal or cardiac disease. Since February 1, 1885, he experienced considerable and lasting pain at the back of the head on the right side. In getting out of bed on the morning of February 23, of the present year, he felt somewhat dizzy, and noticed a pain in the right temporal, extending to the occipital, region. He also found that he could not use his eyes as on the night before. He continued to

work, however, and on March 9, 1885, consulted Dr. Mittendorf, who reports that the use of the patient's right eye was lost early in childhood. The left eye gave him no trouble until recently. On March 9th both eyes were found to have turned considerably toward the nose. Neither eye can be moved in the direction of the external rectus. The pupils slightly contracted, accommodation good. Treatment: Hypermetropia necessitating use of strong glass for left eye to make reading possible. Vision of right eye, which has a corneal macula, very poor. Acuity of vision of the left eye (not fairly tested, patient presenting himself at night) about 20 or 30. Marked hyperæmia of the left disk. Interior of eyes normal. Paralysis extended to third nerve, but was not complete. Patient would move his eyes downward considerably at times, but he seemed to have lost control over the movements of the muscles, and if directed to look in a certain direction, he could not do it. On March 1st he first noticed some numbness and a cold feeling from the fingers up to the middle of the arm on the right side. While this sensation was unpleasant, it in no way interfered with his work of using a heavy hammer, but about April 15th his arm became weak. At the same time coördinate muscular action became impaired. He was unable to direct blows with precision, often striking an inch to either side of the object. He soon had to quit work.

He consulted me on May 14th. At that time the eyeballs were almost immovably fixed. Nevertheless there was complete paralysis of the external recti only. The levatores palpebrarum were not affected, neither were the muscles of the iris. The right hand was colder than the left. Sense of touch diminished, actual muscular power also. Visible trembling and gradual dropping of wrist when the extremity is extended horizontally, showing weakness of extensors. Slight exaggeration of patellar tendon reflex on right side.

The patient's speech was not very articulate; some dysesthesia existed already. There was no dysphagia, and no symptom indicating disturbance of cerebral nerves other than of the fifth pair. The gait was unsteady, resembling that described by Nothnagel in connection with certain cerebellar affections. The lesion producing the above symptoms I am inclined to locate in the pons. As to its nature, it is probably a neoplasm of syphilitic or tubercular origin.

The patient was ordered iodide of potassium in doses beginning with ten grains three times a day, which was increased by five grains every week. In this way the dose was carried up to forty grains three times a day. From June on, a noticeable improvement began, and by September 2d his speech had become almost normal. The power of his right arm was much increased, there was no more headache, and the eyes had largely recovered their mobility.

On October 30th it was observed that the eyes could be freely moved, although some paresis of the external recti still remained. The patient was then taking forty-five grains of the iodide three times a day. Some spitting of blood now occurring, the remedy was discontinued for two weeks, and then resumed with an initial dose of twenty grains.

I believe the anatomical lesion to be situated in the left half of the pons, near the tegmentum, involving the

lemniscus, and extending beyond the raphe, some little distance into the right half of it.

DR. W. M. MITTENDORF said the author of the paper was to be congratulated on the result of the treatment in this interesting case. As stated in the paper, when the patient visited him, there was this paralysis of the external recti, and he thought there was also a slight defect of the facial nerve, and he was inclined to place the lesion in the upper part of the fourth ventricle, but, as motor oculi paralysis developed, he came to the conclusion that there was a more extensive lesion than he had at first supposed. An interesting feature in the case was the fact that, while there was ophthalmoplegia externa, there was at no time while the patient was under his care, any affection of the intrinsic muscles, and this fact, according to recent investigations, pointed to a lesion below the aqueduct of Sylvius. The cases of ophthalmoplegia externa without other symptoms, were very few. He had now under his care a young man with ophthalmoplegia affecting both eyes, in whom there had been no change for two years. The lesion, he supposed, was to be placed in the region of the corpora quadrigemina. At one time he thought there were real ataxic symptoms, but he was unable to make out a clear case of locomotor ataxia.

DR. T. R. POOLEY thought the fact that the patient struck to the outer side of the body, which had been attributed by the author to paresis, might have been caused by faulty projection depending upon paresis of the external rectus muscle. He had never seen a case of complete paralysis of the ocular muscles with so satisfactory results.

DR. WEBER remarked that at first there was no tendency to strike outward. In reply to a question by Dr. Spitzka, he said there had been no wasting of the muscles, although the general nutrition of the patient had not been at all times equally good.

THE PRESIDENT had reported two cases to the American Neurological Society, which in some respects resembled this case, but in some other respects there were important differences. He reported them as cases of ophthalmoplegia externa, according to Hutchinson's nomenclature, and they were, strictly speaking, cases of this sort. The ciliary muscle and the iris were not involved at any time, while the external muscles of both eyes were involved to a greater or less degree. No other nerve tract in the body could be found defective. The two cases had remained about in the same condition, with slight improvement, for two years. It seemed to him, however, that the cases which Hutchinson had reported under the name ophthalmoplegia externa did not all belong to that class, for in only two or three were the external muscles of the eye alone affected. Most of his cases were of a complex character. It seemed to him that the pathology of these cases must vary greatly. The lesion would probably be found to vary, not only in location, but also in character. His cases, he thought, were due to a slow degenerative form of disease, similar to that in progressive muscular atrophy. Certainly some of Hutchinson's cases were of a multiple character, and probably in many others the lesions were multiple.

DR. E. C. SPITZKA was much pleased to find a doubtful point in the past history of the case cleared up by

Dr. Pooley's discovery of a residual paresis of the other rectus externus. It adds, however, to the difficulties of localization, though not incompatible with the diagnosis of Dr. Weber. With regard to Dr. Pooley's suggestion, that the loss of skilled motion of the right side is due to the eye trouble, that possibility had already been taken into account, and disposed of for the following reasons: First, the motor disturbance was not present when the eye trouble was at its height, nor present when the latter began. He believed ophthalmologists will agree that locomotor trouble is apt to be proportionate to the intensity of the eye complaint, and, if anything, to be regulated, provided the eye trouble remains stationary or improves. In this instance, however, we have eye trouble at its maximum without arm trouble, and arm trouble developing as the eye trouble improves, and manifested when the eyes are closed. Besides, we must bear in mind that, as the patient has not had the use of his right eye from childhood, he would not be as likely to be disturbed in his movements as patients with binocular vision would be. He believed the oculo-motor disturbance can be best accounted for by a regional extension of lesion in that part of the tegmentum which lies between the trochlearis and abducens nuclei, and where certain coördinating tracts run.

DR. WEBER asked Dr. Mittendorf whether there were not for a time symptoms of hemianopsia.

DR. MITTENDORF said that there was no lesion of the retina or nerve when he examined the patient.

DR. M. A. STARR asked whether there had been any ptosis.

DR. WEBER replied in the negative.

DR. STARR thought that a lesion lying outside of the cerebral axis, as a syphilitic meningitis, affecting the abducens nerves at their exit between the medulla and pons, might explain the symptoms more intelligibly, than to suppose a lesion in the floor of the fourth ventricle affecting the nuclei themselves. Of course, such a lesion would yield to syphilitic treatment, whereas he could not conceive of a nerve nucleus' being destroyed and again restored. If the third nerve were involved, he might suppose the meningitis had extended a little further forward. He had the privilege of seeing a case in Baumberger's wards at Vienna three years ago, in which the third, the fourth, the sixth, the seventh, and the eighth nerves upon one side were paralyzed, and Baumberger made the diagnosis of lesion at the floor of the fourth ventricle, involving the nerve nuclei from above downward, especially so as there were signs of atrophy in the facial muscles. The autopsy showed localized meningitis affecting these nerve trunks after their exit from the cerebral axis.

DR. WEBER again mentioned the symptoms present, and said that, so far as the oculo-motorius was concerned, there certainly was an affection of the superior and inferior recti.

DR. E. C. SEGUIN had not been convinced, from seeing the patient this evening, that there were any ataxic symptoms in the right upper extremity. The dropping of the fingers might indicate either weakness of the extensors or the loss of a certain amount of muscular sense, which might be due to a lesion situated in many places besides the pons. He was inclined to Dr. Starr's view. The discussion seemed to indicate the vanity of theoretical pathology.

DR. SPITZKA, in a crude way, had always regarded muscular sense disturbance as a factor of ataxia, and he believed authorities generally would so consider it.

DR. SEGUIN said that Erb recently described a case in which there was ataxia, but all kinds of sensation were perfect.

DR. SPITZKA replied that that had nothing to do with the question. Ataxia is of different kinds, cerebellar, spinal, due to ordinary contact, to muscle sense, space sense, and coördinary disturbances, sometimes singly, sometimes combined; but muscular sense disturbance is mentioned in the definitions of ataxia by our best authorities, and he should like Dr. Seguin or any one to formulate a general definition of ataxia which should declare muscular sense disturbance not to be a factor. It is precisely because there is muscular sense disturbance that he believes the lesion to be one of the pons. The interolivary layer happens to run in the deep part of pons. In those levels where the cranial nerve symptoms of this case are possible, he had shown, if any one case be conclusive, that this layer is the muscular sense tract, and the case agrees with others of its kind. There is a combination of slight paresis with the muscular sense disturbance which is almost characteristic of certain pons diseases—it requiring but an extension of the lesion across the deep transverse pons fibres to involve the pyramidal tract bundles. With regard to the suggestion of a meningitis, it does not seem to him to harmonize either theoretically or with experience. It is true that the affection of both abducent nerves might be accounted for in this way. But there are other symptoms which the supposed lesion must accommodate. How to account for the arm symptoms on this ground, he did not know. There are too many important nerves near the hypoglossal, whose function is intact, to account for the dysesthesia on the ground of meningitis. Besides, there is no true paresis of the hypoglossal. Its intrinsic movements are well executed, and there is no evidence of either nuclear or peripheral hypoglossal palsy—in other words, it is some higher tract, the speech tract, that is involved—we know that this runs somewhere in the pons—near the raphe, whereby another nerve, the fifth, is affected in its decussation, thus accounting for the bilateral disturbance of face sensation. But the strongest objection to the meningitis theory is that it would have us believe it possible that the third pair can be diseased so totally in its extracerebral course or intracerebral course, for that matter, as to cause total paralysis of ocular motion, without any affection of the pupil, the accommodation, or the levator palpebræ. He has never heard of such a case, and does not think there is one reported, and he does believe such a case possible. If there were no other reasons for suspecting pons disease, it would, in his opinion, be confirmed by the character of the ocular paralysis; but, in addition, we have the almost pathognomonic combination of paresis and ataxia. True, Dr. Seguin calls it muscular sense disturbance, which it is undoubtedly—with this difference of interpretation and definition, that he says it is not ataxia, and Dr. Spitzka considered it to be such.

DR. STARR thought that the abducens nuclei could not be involved, together with the interolivary layer, without affecting the formatio reticularis, which ought to show sensory symptoms if affected.

DR. SPITZKA said that the difficulty seemed to be that

Dr. Starr had only one particular level of the pons in mind, one not necessary involved in this case. Even allowing the lesion to be in the level spoken of by Dr. Starr, the difficulty he discovers does not seem to him to be as he states it. That no symptoms referable to the formation reticularis are present, can constitute no objection, as long as the function of that part which lies between the raphe and the abducens roots is unknown. The abducens roots, however, skirt and partly perforate the interolivary layer, and so far it is possible to have coincident abducens and muscular sense disturbance; the real difficulty in this case is to account for the double involvement of the abducens, without the bilateral involvement of the interolivary layer. As he understood Dr. Weber when he presented the case, he supposed the lesion to be in the anterior third of the pons, with a dorso-mesal, and possibly caudal, extension too near the ventricular floor. Here the altitude of the tegmentum is extremely low, a comparatively small lesion may involve the interolivary division of the lemniscus—he meant its continuation, the raphe, with its trigeminal decussation, the posterior longitudinal fasciculi, the pyramidal tract slightly, and the speech, either after Raymond and Artaug, or the other theories. The advantage of this explanation over the others offered is, that it requires the smallest lesion to harmonize with the symptoms, while grave objections can be urged against every other location, particularly the one which would locate the lesion as a meningitis involving peripheral nerves.

He reiterated that till the inconsistencies of the oculomotor paralysis are explained away, insuperable obstacles oppose the meningitis theory. Possibly Dr. Weber's reference to the voluntary control of single ocular muscles might lead to misapprehension. No ocular muscle is capable of isolated movement under voluntary effort, but groups of such are. There is a ready-made coördinated mechanism of which the posterior fasciculus is probably the important mediator, which regulates the coördination of both globes, and it is here where the trouble lies.

DR. LEONARD WEBER then read a paper entitled

A CONTRIBUTION TO THE STUDY OF LANDRY'S ASCENDING PARALYSIS.

It was in 1859 that Landry described a few cases of ascending paraplegia with negative post-mortem results as regarded the spinal cord, to which he gave the name of "paralysie ascendante aigue," and in the same year Kussmaul reported two rapidly fatal cases of paralysis in which the post-mortem appearance of the cord was apparently normal. The attempt of Petit fils to classify Landry's ascending paralysis among the varieties of poliomyelitis anterior acuta or subacuta, has been repeated quite recently by Prof. Immermann, but in the light of later researches and of negative results of autopsies made by Westphal, his theory is hardly tenable. Another and perhaps less objectionable theory is that of Rogers, who believes that many cases of the favorable form of Landry's paralysis are really polyneuritis acuta, of infectious or other origin, in which the spinal cord is either not at all or only secondarily affected. In an article in *L'Encephale*, No. 2, 1885, this writer instances the clinical picture presented in many afflictions of the spinal nerves, particularly in polyneuritis, in which the

symptoms are very similar to those of disease of the medulla spinalis. In cases of simultaneous peripheral and spinal affection a correct diagnosis is of course difficult, but although we have hitherto, says Rogers, paid almost exclusive attention to the central lesions, the course of the disease often bears evidence of the fact that the lesion ascended from the periphery to the centre, and he claims that not only do many cases of Landry's paralysis belong in the category of peripheral nervous affections, but also Duchenne's "paralysie générale spinale subaigue," and "paralysie diffuse."

Dr. Weber then gave Rogers's description of the usual course of the disease, and said regarding the etiology that we were still in the dark; Westphal laid much stress upon infection, and Roger drew attention to the frequent coincidence of polyneuritis and tuberculosis. Erb said as late as 1879, that cases of progressive polyneuritis ought not to be mistaken for acute ascending paralysis, since the differential diagnosis is sufficiently established by the sharp pains, anesthesia, and paralysis, limited to the affected nerves, and their rapid loss of electrical excitability.

On the strength of these recent observations, he thought it might be justifiable to speak of two forms of acute ascending paralysis—the well-characterized spinal and the less well-known peripheral. Acute ascending spinal paralysis is characterized clinically by motor paralysis, beginning usually in the lower extremities and advancing with some rapidity to the trunk and upper extremities. The bladder and rectum are but little affected; sensation is nearly normal, and the affected muscles do not waste much, or suffer any change in their electrical excitability. More or less fever may be present, and death from asphyxia is a not very unusual termination. No cord lesions are found at the autopsy. Landry's paralysis is more common in men than in women, and occurs with greatest frequency between the ages of twenty and forty years. It is thought by Landry, Westphal, Roger, and others, that infection, of an unknown character as yet, may be the real determining cause of the disease, and it is significant to note, that in some carefully made autopsies, changes similar to those occurring in other infectious diseases have been found in the liver, spleen, lymphatic glands, and intestinal follicles. In the fatal cases death may occur at a period of the disease varying from two or three days, to three or four weeks. But the average duration seems to be from eight to twelve days. When recovery ensues improvement begins usually within a few days after the disease has been fully developed, restoration occurring first in the parts last affected, and progressing very slowly.

Some cases of poliomyelitis anterior subacuta simulate very closely acute ascending paralysis, and it may not be until the development of atrophy and the loss of electrical excitability that we can be certain of the presence of anatomical lesions in the spinal cord. But a well-marked case of poliomyelitis anterior acuta is not progressive, does not attack the medulla oblongata nor lead directly to a fatal termination; the loss of faradic excitability and the muscular atrophy develop rapidly. In very light cases a doubt might arise in diagnosis. In acute general and infectious myelitis we always find fever, marked sensory disturbances, early loss of all the reflexes, paralysis of the sphincter, diminished faradic

excitability, bedsores, and a rapidly fatal termination. Certain forms of spinal syphilis resemble closely Landry's paralysis, and the diagnosis can often be determined only by the history of the case and the positive results of specific treatment. The prognosis of acute ascending paralysis is always serious, as it is impossible to tell at the beginning whether a case will result in recovery or death. Antisyphilitic treatment has given doubtful results, but better have been obtained from the wet pack or warm baths followed by cold affusions. Of remedies the best would seem to be iodide of potassium and ergot. The application of a continuous current along the spine is recommended by Erb.

The author then related the following case, which had been observed by himself: On December 20, 1880, he was called to see J. H., a butcher, thirty-one years of age, of apparently good constitution, no hereditary taint, syphilis denied. In early life he suffered often from intermittent fever. At the age of twenty-one he went to work in a barometer factory, and after some time began to grow weak, had occasional slight tremor, and frequent vertigo, but no salivation or other sign of mercurial poisoning. These troubles increased, so that he was compelled to give up his work after four years. He then spent four years in the West, and returned home in good health two years ago. About three weeks before he was seen by Dr. Weber, the patient's horse ran away with him in his open cart, and he was obliged to exert all of his strength to control the animal. He received no concussion or apparent injury, but felt tired and ill all the afternoon. The next day he kept about with difficulty, and the day following felt somewhat ill, and had slight fever; and, after some days of paraesthetic feelings, such as numbness and tingling creeping up from the fingers, he gradually lost the use of both arms; and two weeks later, after similar sensations proceeding from the toes upward, the lower extremities became also paraplegic. No paresis of the sphincters was noticed then or at any subsequent time. The stools were retarded. The intercostals and other muscles of the trunk remained intact, and there were no symptoms indicating involvement of the medulla oblongata, but the patient felt some pain along the spine, and continued to have pain and numbness here and there in the extremities.

Up to the time of Dr. Weber's visit the case had not been examined with special care. The author found the patient still unable to do more than move his limbs slightly while in bed; he could neither stand nor walk, nor had he the power to grasp firmly any object. Cutaneous sensation appeared to be normal, but the patellar and tendo Achillis reflexes were absent. The limbs were not wasted, and the muscles responded to electrical stimulus. Pulse and temperature were normal, and examination of the urine gave negative results. The slight improvement of the paralysis, noticeable to the patient at the beginning of the fourth week, had not progressed any further. Ascending myelitis and poliomyelitis were excluded, and the diagnosis made of ascending paralysis, Landry's. It being impossible to carry out at his home a systematic course of electrical treatment, with massage and warm baths, which seemed to be indicated, the patient was removed to Roosevelt Hospital, where the late Dr. Goetyky became interested in the case. He agreed

with Dr. Weber as to the probably nature of the disease, and also looked upon the chances of recovery as good. The patient was discharged cured on the thirtieth day, and was soon able to resume his occupation. He called at Dr. Weber's office October 30, 1885, at which time he appeared in fair health, could walk briskly and firmly, and said he was well able to attend to his business, but he required more sleep than he did five or six years ago. He had occasional backache, but no lancinating pains; the bowels were somewhat constipated; the urine normal; the patellar tendon reflex was totally abolished on both sides, and the patient could not stand very well on one foot when the eyes were closed. The pupils were normal. There were no sensory disturbances, and no paraesthesiae.

The author then related briefly two cases recently reported by Sorgenfrey and H. Mietke, in which there was early loss of the patellar and tendo Achillis reflexes, but in which, as opposed to his own case, the reflexes returned after the complete recovery of the patients. He also mentioned a case of Immermann's, in which the diagnosis wavered between anterior poliomyelitis and Landry's paralysis, and in which, at the autopsy, there was found recent inflammation of the anterior horns in the cervical, dorsal, and lumbar regions of the cord. It was this case which led Immermann to conclude with Petit fils that both these clinical pictures might be due to the same morbid process, differing only in degree.

DR. E. C. SEGUIN had not seen a case of Landry's disease, but he had always had a strong suspicion that there was great similarity if not identity between that disease and poliomyelitis acuta. The mere matter of ascension did not seem to him to be of so great importance in the diagnosis. The views which, when a pupil, he had heard Brown-Séquard frequently express with regard to ascension of spinal symptoms had always seemed to him very reasonable. They were that ascension of symptoms might be apparent when they did not represent any ascending lesion in the cord; they were due to a change in the depth of the lesion in the cord. Suppose, theoretically, a case of paralysis of the arms, with later paralysis of the legs; it is not at all necessary to suppose a descending lesion in order to explain the descending symptoms; a change in the depth of a lesion which extends but a little ways up and down the cord will account for the descent of the symptoms. In the same way we could account for ascending symptoms without supposing an ascending lesion in the cord. Many authors lay stress upon the value of negative symptoms in the diagnosis of Landry's paralysis—such as absence of degenerative reaction and muscular atrophy; but it is equally true that in many cases of poliomyelitis these symptoms are retarded. He regarded Immermann's case as instructive, inasmuch as it shows the similarity if not the identity of the two diseases; the difference may be in exact location or in the virulence of the affection.

DR. PECKHAM described the symptoms in the case of a girl sixteen years of age, whom he saw only once, and made a diagnosis of acute poliomyelitis, following exposure by sitting on a rock at a picnic. He gave a favorable prognosis. The case was reported by Dr. Rockwell before the American Neurological Society, in June last, as one of transverse myelitis, with recovery. Con-

siderable discussion followed with regard to the nature of the disease.

DR. SACHS thought that while Immermann might entertain the idea that the pathological process in Landry's disease and poliomyelitis is the same, he did not suppose that he believes the lesions to be identical in localization. While the question of infectious origin has not been demonstrated in either acute myelitis or Landry's disease, Dr. Sach's thought it deserved investigation.

DR. WEBER closed the discussion, reviewing the differential diagnosis between Landry's paralysis and poliomyelitis anterior acuta.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, November 10, 1885.

THE PRESIDENT, ROBERT F. WEIR, M.D.,
IN THE CHAIR.

DR. L. M. YALE read a paper entitled
REMARKS ON EXCISION OF THE HIP.

(See page 592.)

DR. MARKOE said that the paper was so statistical in character that there was hardly room for discussion, and that it contained extremely interesting and very valuable accumulation of results obtained by different operators. So far as he had been able to discover, nothing appeared in the paper which indicated that the danger of tubercular infection was either greater or less in those operated upon than in those not operated upon.

DR. YALE said that was the conclusion, except in this one instance. Caumont analyzed all the cases treated in every way, between one and two hundred in all, and drew the conclusion that tuberculosis in no way is relieved by exsection; indeed, one-third died after excision, and one-fifth of his suppurative cases without exsection. Of course, that was not a sufficient large number of cases to settle the question.

THE PRESIDENT asked whether we are not premature in laying much stress on general infection after an operation upon a tuberculous bone or joint, as it was a matter which had not been brought to our notice, especially with reference to later pathological developments, until within the last two or three years. He should feel unwilling to accept such statements as conclusive until a larger experience had been obtained. This inference, if received as final, would cut off all attempts at operative interference for the purpose of getting ahead of tuberculous disease in bones and joints, and would render operative interference unjustifiable.

DR. C. T. POORE thought that private statistics should not be put in comparison with hospital statistics, because statistics derived from patients among the better classes are more favorable with regard to the expectant plan of treatment. He did not believe that statistics in general of excision of the hip-joint in hospital cases would show more than thirty-three per cent. mortality, and in the same class of children treated expectantly without operation, his impression was that mortality is greater than after excision.

He was unable to see, while persistent suppuration exists, how one can determine whether or not he had to deal with simple caries of the joint, or with a sequestrum

which cannot be removed until an operation is performed. Besides, it is a serious question whether many cases of extensive disease of the acetabulum can ever get well without an operation, and whether an operation in those cases will remove that source of danger.

DR. F. LANGER thought it generally conceded that a comparatively large percentage of cases of hip-joint disease would entirely recover under proper conservative treatment, without excision of the joint. Even extensive destruction of bone does not exclude spontaneous recovery and comparatively good functional result. He has observed so much destruction of bone, that, at last, the trochanter was considerably above Nélaton's line, still without noticeable suppuration, and, at the end, with some mobility and a very useful limb.

He thought it so much a point of experience as to whether, in a given case, one should follow out conservative treatment or resort to more radical interference, that only the long-continued observation of a large material might entitle us to draw general conclusions. He must say that, as a principle, he was rather inclined to push the conservative treatment as far as possible; and his impression was, that even in cases presenting a more serious aspect, if only all the indications of hygiene and orthopedics are fulfilled and retentions of pus prevented as much as possible, good results can be obtained. Further, he thought that if by consequent general treatment one succeeds to alter in a favorable way the constitution of the patient and to check the progress of the local tubercular process, that then any kind of surgical interference will be followed by more satisfactory results, as far as complete recovery is concerned. Though feeling convinced that small particles of necrosed bone may be absorbed by the action of vigorous granulations, it is beyond doubt that a large percentage of cases will not recover *entirely*, unless tubercular sequestra are removed. Hence, eventually for these cases, the indication of excision falls into the scope of consideration. He had repeatedly tried to avoid total excision, and to perform more of a sequestrectomy, but he must say, that in all cases but one, he was obliged to add excision of the upper end of the femur, in order to get sufficient access to the diseased parts as would enable him to remove with some degree of certainty the structure involved. The one case above mentioned, in which several tubercular sequestra were removed from the anterior aspect of the acetabulum without touching the head of the femur, except to scrape away quite an amount of granulations, healed apparently, but it had not been under observation a sufficient length of time to enable him to determine whether recovery was permanent.

He regarded the necessity to remove so much bone, in excision of the hip-joint, as a great drawback of the operation, and did not think that the amount of shortening was as little as generally assumed. The question, what is the amount of shortening of the extremity in adults, who at an early age have been subject to excision of the hip-joint? is not settled yet, and is worthy of careful investigation. Suppose we have a young patient with tubercular ostitis of the acetabulum, and we remove, as might become necessary, a large portion of that bone, besides the separation of the shaft of the femur above the trochanter minor. In such a case we may have three or more inches of bone in its length

lost, and have, in addition to that, abolished what additional growth may have come from the preservation of the upper epiphysial cartilage. We ought to state how much that represents in the adult, in order to fix more accurately the question of indication for total excision. The latter will, of course, always exist where the operation has to be done as a means of preserving life; and he thought that the standpoint of a good many surgeons and orthopedists, as a matter of principle not to do any excision at all, was identical with sacrificing a certain number of lives which otherwise might have been saved. Especially the results of orthopedists are not absolutely conclusive, because the majority of the worst progressive cases do not apply to them, or eventually give up their treatment in order to search for some more speedy relief.

Regarding the very important question of functional result, he was not able to give a decisive answer. He had had some very good results after excision, and other cases in which, after excision, recovery was incomplete, or the functional result deficient. He had observed in several cases, where a great portion of the acetabulum had to be removed, in spite of consequent adduction during the after-treatment, that the shaft will not find a favorable point of support. One is able to make out, in such cases, a certain amount of slipping of the bones against each other, according to the more or less strong and tense fibrous connection; and he must further say that he was not yet convinced that under all circumstances a patient with movable joint, after excision, was better off than one with ankylosis in good position. The latter, with a slight amount of flexion, will always have a safe gait, and is not deprived of the advantage to be able to sit. Besides, his limb will probably not be as short as that of the former, who, to be sure, might occasionally offer an excellent result, at other times an incomplete one. He also thought one point worthy of attention, namely, whether the position of the limb, after excision as well as after conservative treatment, was a lasting one, and eventually how, later on, perhaps after a good many years, an unfavorable position might take place.

He had once, within the last seven years, seen general tuberculosis follow excision of the hip, apparently caused by the operation. The latter was done at an early stage of the disease. There were several sequestra belonging to the head of the femur, and the patient died, in the third month after the operation, from tubercular meningitis.

DR. YALE said with regard to the amount of shortening which may occur, that (according to Ollier's experiments) if it was assumed that the growth from the upper epiphysis was absolutely abolished it was possible that, with the ordinary growth from that extremity of the femur, about nine centimetres might be lost. To that there may be added the atrophy from inactivity. He had measured many cured patients, some of whom had had abscesses, others none, with regard to the different sources and amounts of shortening, he had seen a tibia in a coxalgic person fall behind one inch or more, and it was fair to presume that the diminution in the growth of the femur is quite as much. If that be added to the other, it is possible that several inches may have been lost through simple inactivity.

The amount of functional use which a limb may have

with ankylosis after an extensive disease of bone, was recently brought to his mind by a patient who fifteen years ago came under his care with abscess which had been totally neglected. There were many fistulae, and in the spring of 1871 he contemplated excising the joint, and asked the opinion of Dr. Sayre, who said that excision would do but little good on account of the great amount of disease of the pelvic bone. He therefore treated the case as best he could without resorting to operative interference, and the patient recovered with ankylosis, is now a teacher in one of the public schools, although she still has six sinuses about the hip which discharge more or less, but the limb is in very good position, the actual shortening in the femur is one and a quarter inches, in the tibia about one inch, which is partially compensated for by tilting of the pelvis, and the remainder is nearly made up by hyperextension of the sound limb, and practically therefore she walks with a shortening of only about half an inch, and locomotion is with only a very slight limp.

He also recalled the case of a young man who, after he was cured, had thirteen cicatrices about the hip, and he was, when last seen, able to take an active part as member of a baseball club.

CORRESPONDENCE.

CHOREA.

To the Editor of THE MEDICAL NEWS.

SIR: The interesting editorial in one of your late issues on chorea raises a question, which seems to me is of so much interest and importance that I must crave a little space for its discussion. As I understand the editorial, the point is made that in chorea the tone of the ganglionic cells cannot be depressed, and that it is not possible for cells which are so diseased, as those I found in the spinal cord of the dog, to produce choreic movements as violent and as regular as those seen in the dog. The obvious reply to this is that whether it be possible or not the thing happened because the choreic movements were violent and the cells were diseased, and there was no other source from which the movements could have originated except the spinal cells. The amount of nervous energy necessary for choreic movements is much less than for voluntary motion. I believe always in the dog and usually, if not always, in the child, chorea is associated with a loss of power. The animal whose limbs are moving steadily and rapidly, may be scarcely able to drag them after him, and is more exhausted by a walk of a few rods than in health by as many miles. It must be remembered also that the change in the cells is a progressive one, and that there sometimes comes a condition of complete paralysis in which even the tremors may be lost. This represents the last stage of cell degradation, but long before this stage is reached the nutritive tone of the cell has undergone most marked diminution. I can see, myself, no reason for believing that at any time during the ordinary chorea of the dog is there an increase in the nutritive activity of the nervous protoplasm. My own experience being that always, so far as I could judge, there has been lessened power when any attempt at voluntary movement was made.

After all, however, this discussion is perhaps one

largely of terms, for we hardly have definite conceptions of what constitutes lowered or increased tone of a ganglionic nerve-cell. The important fact is, that there is an altered condition of the nerve-cell which leads it to discharge, at very short intervals minute amounts of nerve energy, but unfits it for storing such energy and discharging it, as it were, *en masse*, and also for sustaining a prolonged production of large quantities of force—*i. e.*, of enduring a prolonged voluntary effort.

Yours, H. C. WOOD.

PHILADELPHIA, NOV. 21, 1885.

NEWS ITEMS.

MONTREAL.

(From Our Special Correspondent.)

EXTRACTION OF LARGE CALCULI.—In the Montreal correspondence of THE MEDICAL NEWS, for February 7, 1885, Dr. Hingston is mentioned as having exhibited at a meeting of the Medico-Chirurgical Society, a calculus weighing nearly six ounces removed successfully from a young man by the lateral operation. He remarked, that he brought this large stone before the Society because he had lately seen it stated that Sir Henry Thompson had declared that it was impossible to remove a stone larger than three ounces by the lateral operation. At a recent meeting of the Medical Society, Dr. Hingston read a letter from Sir Henry Thompson in which the latter stated, that he had been only partially quoted, and that the context modified considerably the text, and the full text and context of his statement are as follows: "No incisions can be made in the region which belongs to that operation (the lateral) through which a calculus of three ounces or more can be extracted. Laceration, either avowedly by instruments, or but half concealed under the name of gradual distention, invariably takes place, and that affecting very important structures, often to a large extent."

In making this correction Dr. Hingston observed, that while he admitted that the extraction of large calculi is often attended with more or less laceration, he thought the limit of three ounces below the possible, and should not decide the question as between the lateral and suprapubic operation, for in the last cases published in Canada, the suprapubic operation for a calculus of three ounces was fatal, whilst the lateral operation for a calculus nearly twice that size was successful and without injury to the neck of the bladder or other important structures.

CINCINNATI.

(From our Special Correspondent.)

DR. J. H. TATE, for many years Obstetrician to the Cincinnati Hospital, has recently resigned. In recognition of his past services, he was elected Consulting Obstetrician. Dr. G. M. Allen, Assistant to the Chair of Obstetrics at the Miami Medical College, will be Dr. Tate's successor.

DR. A. T. KEYT, one of our most highly esteemed physicians, died at his residence at East Walnut Hills, on the 19th inst. Dr. Keyt was known to the profession chiefly in connection with his labors to perfect the sphygmograph. A pattern of the instrument invented

by him has met with marked favor in Europe, as well as in our own country.

DR. THOMAS ADDIS EMMET has been elected an honorary fellow of the Academy of Medicine in Ireland.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM NOVEMBER 17 TO NOVEMBER 23, 1885.

HEVER, ANTHONY, *Major and Surgeon*.—Member of the Army Medical Examining Board, now in session in New York City, is relieved from the additional duty of Attending Surgeon in that city, to take effect when Jos. R. Smith, Lieutenant-Colonel and Surgeon, shall have arrived in New York, and entered upon that duty.—S. O. 267, A. G. O., November 19, 1885.

ELBREY, F. W., *Captain and Assistant Surgeon*.—Sick leave of absence extended six months, on surgeon's certificate of disability.—S. O. 263, A. G. O., November 14, 1885.

REED, WALTER, *Captain and Assistant Surgeon*.—Granted leave of absence for one month, with permission to apply for one month's extension, to take effect about December 1, 1885.—S. O. 215, Department of Platte, November 18, 1885.

STRONG, NORTON, *Captain and Assistant Surgeon*.—Relieved from duty at Fort Union, New Mexico, and ordered for duty as Attending Surgeon Headquarters, District of New Mexico, and Post Surgeon, Fort Marcy, New Mexico.—S. O. 171, Department of Missouri, November 16, 1885.

CHAPIN, A. R., *First Lieutenant and Assistant Surgeon*.—Ordered for temporary duty at Fort Robinson, Nebraska.—S. O. 213, Department of Platte, November 18, 1885.

EWING, C. B., *First Lieutenant and Assistant Surgeon*.—Now at Fort Leavenworth, Kansas, ordered to proceed to Fort Reno, and report to Commanding Officer for temporary duty in the field.—S. O. 170, Department of Missouri, November 13, 1885.

SIMONS, JAMES, *Lieutenant-Colonel* (Retired), died November 11, 1885, at Baltimore, Md.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 21, 1885.

DRENNAN, M. C., *Surgeon*.—Ordered to Training Ship, "New Hampshire."

AULICK, H., *Surgeon*.—Detached from Training Ship "New Hampshire," and wait orders.

FILTS, H. A., *Assistant Surgeon*.—Ordered to appear before Examining Board preliminary to promotion.

RUSH, C. W., *Passed Assistant Surgeon*.—Granted sick leave for three months from November 20, 1885.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING NOVEMBER 21, 1885.

YEMANS, H. W., *Passed Assistant Surgeon*.—Promoted to be Passed Assistant Surgeon from November 1, 1885, to November 14, 1885. Reassigned to duty at San Francisco, California, November 16, 1885.

MCINTOSH, W. B., *Assistant Surgeon*.—Appointed an Assistant Surgeon, November 14, 1885. Assigned to duty at New Orleans, Louisiana, November 16, 1885.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession. Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.